

As a primarily diurnal species, humans have used various light sources to shape our nighttime surroundings with little regard for how these lights may have an effect on other organisms. For most of human history, the amount of light produced by humans was negligible, and thus, the impact on other organisms was inconsequential. However, recent research indicates that all global ecosystems are experiencing increasing amounts of light pollution and that 99 percent of the U.S. population live under light polluted skies. The current degree of light pollution has the potential to influence the ecology of organisms, including reproduction, migration, communication, predation, and competition. Artificial lights can be detrimental or beneficial to organisms depending on whether they are light averse or light opportunists and more research is needed to mitigate the effects of increasing amounts of artificial light on ecosystems. The primary objective of this bat research was to determine if bats in northeast Georgia alter their foraging behavior in response to light pollution produced by residential security-type lighting. In order to examine the effect of light pollution on bat foraging behavior, acoustic detectors and lights were placed at multiple sample locations in northeast Georgia. The 12 volt LED lights and Anabat Swift detectors were placed in areas where bats likely forage such as open areas, water sources, or along roads. Calls were recorded at each point for multiple nights both with and without the lights on. BCID, an automated bat call classification software program, was used to use count bat calls as an index of activity. Out of the 20 locations sampled thus far, our results suggest that the addition of small lights suppress bat activity by 70 percent.