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Adapting to City Life

*The Effect of Artificial Light at Night on Urban and Rural Western Black Widow Populations*

Light pollution, specifically artificial light at night (ALAN), often alters circadian rhythms, development, intraspecific interactions, and temporal dynamics within communities. Nevertheless, in rare cases, animals may thrive in urban areas flooded with ALAN, despite possible tradeoffs in their development and behavior. Here, we test for the effect of ALAN on development and behavior in black widow spiders (*Latrodectus hesperus*) collected from urban and desert habitats. Black widows are a superabundant urban pest of medical importance, and it is unclear which urban drivers favor this pest. We propose changes in photoperiod due to ALAN will slow development and elicit behavioral compensation. Thirty juvenile males were reared at two different light treatments (normal: 12-hour light, <2,500 lux, and 12-hour dark versus ALAN: 12 hours of light and 12 hours of low light (25-28 lux)). We measured foraging voracity, development rate, size at maturity, and mortality rates across habitats (urban versus desert) and light treatment. Light pollution is an important aspect of urbanization that needs to be better understood as our planet becomes increasingly urbanized.

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