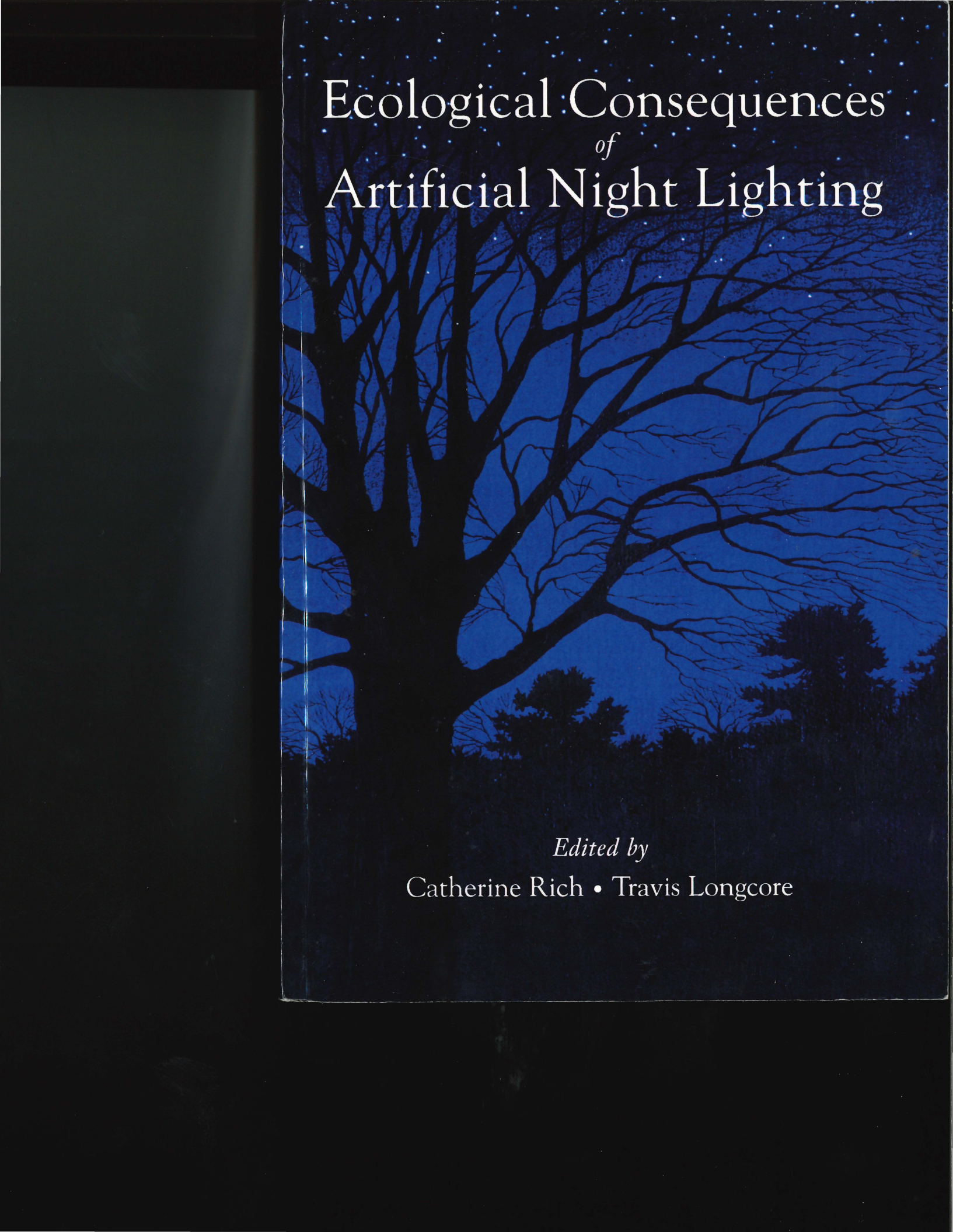


## *Chapter 2*

# Effects of Artificial Night Lighting on Terrestrial Mammals

Paul Beier

All 986 species of bats, badgers and most smaller carnivores, most rodents (with the notable exception of squirrels), 20% of primates, and 80% of marsupials are nocturnal, and many more are active both night and day (Walls 1942). Thus it would be surprising if night lighting did not have significant effects on mammals. Compared with investigations on birds, lepidopterans, other insects, and turtles, however, few studies, or even anecdotal reports, document the effects of artificial night lighting on mammals in the wild. Because of the dearth of empirical evidence, this chapter begins with a review of the biology of mammalian vision, including the extensive literature on how moonlight affects nocturnal behavior of mammals and how light influences mammalian biological clocks. I then discuss several classes of likely effects of artificial night lighting on mammals, namely disruption of foraging patterns, increased predation risk, disruption of biological clocks, increased mortality on roads, and disruption of dispersal movements through artificially lighted landscapes. I include recommendations for experiments or observations that could advance our understanding of the most likely and significant effects.



# Ecological Consequences *of* Artificial Night Lighting

*Edited by*


Catherine Rich • Travis Longcore

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