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FOX SQUIRRELS CAUSE POWER OUTAGES: AN URBAN WILDLIFE PROBLEM^{1/}

by J. C. Hamilton^{2/},^{3/} R. J. Johnson^{1/}, R. M. Case^{2/},
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In urban areas, power outages are caused each year by fox squirrels (*Sciurus niger*) that use electrical power equipment as travel lanes, rest sites, or for other activities. When a squirrel crosses a live bare wire on a transformer, the result is a blown fuse and electrocution of the squirrel. Power company outage reports were examined to determine when and where squirrel-caused outages occurred. Sixteen field sites in Lincoln were selected for study. Eight sites encircled transformers with ≥ 4 squirrel-caused outages, 1980-1985, and eight were adjacent control sites with no such outages. Squirrel behavior in relation to power

equipment was observed and habitat variables were measured at all sites. Additional data on vegetation within 2 m of the power equipment were collected at 22 sites in Omaha. Eleven Omaha sites were at transformers that had >3 squirrel-caused outages (1985-1986) and 11 were at adjacent control sites. Results indicate that problem sites had more squirrels than control sites. Numbers of leaf nests were significantly greater in problem sites ($P < 0.05$). In addition, squirrels were observed almost twice as many minutes in problem sites, and time-area counts indicated increased numbers of squirrels in problem sites. Mean basal area of mulberries within 2 m of all power equipment and within 2 m of the power pole was 2.5 or 15 times greater, respectively, in problem sites than in control sites. Results indicate that barriers and habitat management may be potential control techniques. Results of this study provide a greater understanding of squirrel biology in urban environments and may yield greater predictability and control of squirrel-caused power outages.

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