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NYT: Squirrel Power!

Some say the world will end in fire. Some say ice. Some say coordinated kamikaze attacks on the power grid by squirrels. At least, some have been saying that to me, when they find out I've spent the summer keeping track of power outages caused by squirrels.

Power outages caused by squirrels are a new hobby of mine, a persnickety and constantly updating data set that hums along behind the rest of my life the way baseball statistics or celebrity-birthing news might for other people. It started in April, after I read about a squirrel that electrocuted itself on a power line in Tampa, Fla., cutting electricity to 700 customers and delaying statewide achievement tests at three nearby schools. I was curious, just enough to set up a Google news alert: squirrel power. But as the summer progressed, and the local news reports of power outages caused by squirrels piled up in my in-box, my interest in power outages caused by squirrels became more obsessive and profound.

I know: it's hard to accept that a single squirrel can disrupt and frustrate thousands of people at a time, switching off our electrified lives for hours. But since Memorial Day, I've cataloged reports of 50 power outages caused by squirrels in 24 states. (And these, of course, are only those power outages severe enough to make the news.) Fifteen hundred customers lost power in Mason City, Iowa; 1,500 customers in Roanoke, Va.; 5,000 customers in Clackamas County, Ore.; and 10,000 customers in Wichita, Kan. — and that was just during two particularly busy days in June. A month later, there were two separate P.O.C.B.S., as I've come to call power outages caused by squirrels, around the small town of Evergreen, Mont., on a single day.

Squirrels cut power to a regional airport in Virginia, a Veterans Affairs medical center in Tennessee, a university in Montana and a Trader Joe's in South Carolina. Five days after the Trader Joe's went down, another squirrel cut power to 7,200 customers in Rock Hill, S.C., on the opposite end of the state. Rock Hill city officials assured the public that power outages caused by squirrels were "very rare" and that the grid was "still a reliable system." Nine days later, 3,800 more South Carolinians lost power after a squirrel blew up a circuit breaker in the town of Summerville.

In Portland, Ore., squirrels got 9,200 customers on July 1; 3,140 customers on July 23; and 7,400 customers on July 26. ("I sound like a broken record," a spokesman for the utility said, briefing the press for the third time.) In Kentucky, more than 10,000 people lost power in two separate P.O.C.B.S. a few days apart. The town of Lynchburg, Va., suffered large-scale P.O.C.B.S. on two consecutive Thursdays in June. Downtown went dark. At Lynchburg's Academy of Fine Arts, patrons were left to wave their lighted iPhone screens at the art on the walls, like torch-carrying Victorian explorers groping through a tomb.

One June 9, a squirrel blacked out 2,000 customers in Kalamazoo, Mich., then 921 customers outside Kalamazoo a week later. A local politician visited the blown transformer with her children to take a look at the culprit; another witness told a reporter, "There was no fur left on it. It looked like something from 'C.S.I.' " She posted a photo of the incinerated animal to her Facebook page.

When I tell people about power outages caused by squirrels — and trust me when I say that I tell

people about power outages caused by squirrels quite often — I wind up hearing a lot of the same snarky jokes. People say the squirrels are staging an uprising. People say the squirrels are calculating, nut-cheeked saboteurs trying to overthrow humanity. Like the apes in “Planet of the Apes,” or the Skynet computer network in “The Terminator,” the squirrels represent a kind of neglected intelligence that’s suddenly, sinisterly switching on.

Don’t panic, I say. Squirrels have been causing power outages since long before I started cataloging power outages caused by squirrels. (In 1987, a squirrel shut down the Nasdaq for 82 minutes and another squirrel shut down the Nasdaq again in 1994 — a seminal bit of P.O.C.B.S. history that was sometimes noted in coverage of the power outage at the Nasdaq in August, which was a power outage not caused by squirrels. “This is a terrible pain in the neck,” the president of one brokerage firm told The Wall Street Journal in 1994 — which, I’ve found, is still a typical reaction to power outages caused by squirrels.)

Matthew Olearczyk, a program manager with the Electric Power Research Institute, explains that typically a squirrel will cause a blackout by scampering across electrical equipment and touching simultaneously both an energized component, like one of the cylindrical transformers at the top of a utility pole, and a grounded piece of equipment. The squirrel completes the circuit, generating an arc. There is an instantaneous flash of blue light. At its center is the squirrel, combusting. (In one news story, the squirrel was said to make a “popping sound” when it ignited.)

And yet the grid is actually designed to handle this violent interruption. As soon as the dead animal drops to the ground, eliminating the interference, the flow of electricity should resume. But if the squirrel doesn’t fall off the equipment — if its charred carcass is lodged there — the squirrel can trigger a so-called continuous fault, interrupting the restarted flow of electricity all over again. It’s a zombie attack: a lingering, second wave of obstruction. The lights go out when our electrical grid can find no way around this stuck hunk of dead weight that used to be a squirrel.

The aftermath can be gnarly. Often, there are burned-out circuit breakers or other costly, obliterated equipment to clean up or replace. And occasionally, a P.O.C.B.S. will generate an idiosyncratic storm of ancillary mayhem, too. I’ve read about a squirrel that, last February, chewed into high-voltage lines near a water-treatment facility, setting off “a chain of improbable events” that forced the city of Tampa to boil its water for the next 37 hours, and I’ve read about a flaming squirrel that allegedly fell from a utility pole in April and started a two-acre grass fire outside Tulsa, Okla.

Mr. Olearczyk insists that there is no credible way to estimate the number of power outages caused by squirrels nationwide. (He explained that attempting a tally would mean consulting a particular piece of paperwork from every local utility in the country, and that some of those forms might not even have the information I was looking for. Though he told me encouragingly, “You’re after something important, so let us know if you find out!”)

What exists, instead, are only flecks of information, the partial outline of a very annoying apparition. In Austin, Tex., squirrels have been blamed for 300 power outages a year. Other utility companies have claimed that between 7 and 20 percent of all outages are caused by some sort of wild animal, and a 2005 study by the State of California estimated, hazily, that these incidents cost California’s economy between $32 million and $317 million a year. Feral cats, raccoons and birds are also nuisances. Last month, reports surfaced in Oklahoma of great horned owls dropping snakes onto utility poles, thereby causing frequent power outages. Still, no one seems to dispute the disruptive primacy of squirrels.

However, Mr. Olearczyk believes strongly that power outages caused by squirrels are on the decline. For at least a decade, utility companies have been tricking out their equipment with an array of

wildlife deterrents to combat the problem, like “arrester caps” and “bushing covers,” the Southwire SquirrelShield, the E/Getaway Guard and free-spinning baffles to make squirrels lose their balance.

The industry has also researched discouraging squirrels by spraying utility poles with fox urine and painting equipment red, though both of these tactics have failed; it’s not even clear whether squirrels can see the color red. Some utilities have installed the kind of plastic owl used to keep pigeons off building facades. However, an industry study notes, “one utility reported that the fake owl was attacked by a hawk which in turn caused a substation outage.”

AT some point this summer — I think it was around July 31, when just under 13,000 customers got hit by a P.O.C.B.S. in Hendersonville, Tenn. — I found myself trying to imagine power outages caused by squirrels from the squirrels’ point of view. So I called John L. Koprowski, a squirrel biologist at the University of Arizona, Tucson.

There have been very few squirrel specialists throughout history. The most accomplished was Vagn Flyger, a University of Maryland biologist who trapped squirrels with a mixture of peanut butter and Valium and then affixed them with radio transmitters; his major contribution to squirrel science was mapping the so-called Great Squirrel Migration of 1968 across the Eastern Seaboard. (Mr. Flyger also liked to eat squirrels.) Mr. Koprowski started studying squirrels as a biology student in Ohio because he needed to study some sort of wild animal and he didn’t own a car.

Essentially, Mr. Koprowski explained, power outages caused by squirrels are the product of a cascade of coincidences — of various forces, including basic squirrel behavior, colliding.

Squirrels chew through electrical wiring because the animals are constantly teething. An adult squirrel’s incisors never stop growing — they can grow as much as 10 inches per year — and the animals must chew constantly to keep them worn down. Squirrels gnaw or burrow their way into transformers for the same reason they enter rotting cavities of aging trees: hollow spaces offer them den sites and safety from predators. Squirrels break into equipment at substations because the seeds and insects they eat get sucked into that machinery by cooling fans, or are pooled inside by the wind. Mr. Koprowski described the flat tops of transformers as perfect spots for squirrel “basking behavior,” when squirrels sprawl out in the sun to warm up, or in the shade to cool down, and also ideal “runways” from which squirrels can start their flying leaps into the canopy.

“Squirrels value many of the same things that humans value,” Mr. Koprowski explained. It’s why they’re among America’s most successful synanthropes, what biologists call species that thrive alongside humans, in the landscapes we dominate. The beautiful, shade-producing, property-valu--raising trees that we’ve filled our neighborhoods with, like oaks, walnuts, maples and elms, also produce the seeds, nuts and acorns at the core of the squirrel diet. Thirty-five percent of America’s urban areas are now covered with trees, while sprawl and exurban development have pushed homes further into formerly natural areas. Squirrel habitat and our habitat are increasingly converging. And we are only now reaching what may be peak P.O.C.B.S. season. In late August and September, squirrels are both abundant and most active: skittering around, stockpiling food, hustling to get stuff done before winter — more prone to crossing paths with the path of our electricity.

“People are living in areas with higher squirrel densities now,” Mr. Koprowski said. It’s as simple as that. We’re getting in their way, too. It’s easy to forget that the party most inconvenienced by a power outage caused by a squirrel is the squirrel that caused it.

What has my interest in power outages caused by squirrels taught me, ultimately? Why do I find power outages caused by squirrels so meaningful?

Naturally, I've been giving these questions some serious thought.

I've come to see each P.O.C.B.S. as a reminder of our relative size on the landscape, recalibrating our identity as one set of creatures in a larger ecology. We are a marvelously successful set of creatures, though. A power outage caused by a squirrel feels so surprising only because we've come to see our electrical grid — all these wires with which, little by little, we've battened down the continent — as a constant. Electricity everywhere, at the flick of a switch, seems like the natural order, while the actual natural order — the squirrel programmed by evolution to gnaw and eat acorns and bask and leap and scamper — winds up feeling like a preposterous, alien glitch in that system. It's a pretty stunning reversal, if you can clear the right kind of space to reflect on it, and fortunately power outages caused by squirrels do that for you by shutting off your TV and Internet.

After the city of Fort Meade, Fla., suffered more than two dozen P.O.C.B.S. in a year, a resident told a reporter: "I just didn't think a squirrel could make the lights go out. They're just tiny little things." A century ago, a shrewd squirrel might have been equally skeptical about our ability to make so many lights go on, watching a few little humans raise the first wooden pole.

By JON MOOALLEM