

WILDLIFE OMNIBUS

"national wildlife"
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Danger: high voltage

SLAKING THEIR WAY across the American landscape, those seemingly endless networks of electric transmission lines are anything but pretty to look at and to some, at least, they appear downright dangerous. Most of the older facilities are relatively safe. But a whole new generation of far more powerful networks is now under construction in many parts of the country and these lines do pose serious threats to human health and to the environment.

Transmitting up to 765,000 volts, the new conductors often pass just 40 to 50 feet above the ground. Walking under them, you can hear a sizzling, crackling sound that is caused by an electric discharge from the bare wires. In fog, rain or snow, it increases as much as 100-fold. That high-voltage discharge causes the air to break down as an insulator and the space around it becomes a cauldron of electrical and chemical activity. One of the products of this activity is ozone, a form of air pollution.

In the vicinity of the transmission lines, there is also a very intense electrostatic field. Not long ago, I discovered a simple and dramatic way to make this field visible. By carrying ordinary fluorescent bulbs near a 765,000-volt line, I found that the tubes lit up within 100 feet of the line's right-of-way — without touching any metal. The closer I moved to the line, the brighter the bulbs glowed (see photograph). In a sense, everything near these high-tension lines is plugged into electricity. There are small but continuous currents running through the ground, the plants and even people in the area.

What happens to living objects that are constantly exposed to such an electric field? Surprisingly, little research on this question has been conducted by power companies, even though more than 1,000 miles of the lines are already in operation.

To date, the only thorough examination is a study conducted in the Soviet Union, where 250 men working at extra-high-voltage



substations were compared with men working at lower power facilities.

The long-term study concluded that constant exposure to intense fields without adequate protection resulted in "shattering the dynamic state of the central nervous system, heart and blood vessel system, and in changing blood structure. Young men complained of reduced sexual potency." As a result of the study, safety standards for maximum exposure to dangerous electric fields have been established in Russia. Included in the "dangerous" category are fields intense enough to light a fluorescent tube.

Only recently have some states attempted to assess the safety of these installations in this country. In New York, for example, various state agencies have demanded hearings into the safety of 765,000-volt lines before any more are built or operated. In the meantime, however, plans reported by the Federal Power Commission call for at least 2,500 miles of lines at 765,000 volts or higher to be built in the U.S. within the next five years.

— Louise B. Young

Mrs. Young is the author of *Power Over People* (Oxford University Press, 1973; paperback, 1974), an in-depth look at power line problems.

Death trap

NO ONE KNOWS how many are killed flying into electric lines after dark but in just one northern Michigan village, has added up to 30 mute swans in 10 years. The trouble began in 1965 when a bridge near the swan River nesting place was repaired. As part of that process, the trees that had diverted birds from power and telephone lines were running across the bridge were cut down. Consequently, those lines became a death trap for the swans, and, since the mute swan is monogamous, each death has depleted the flock's growth.

A few years ago, to placate the villagers, the Consumers Power Company attached large wooden blocks at staggered intervals along power lines, hoping to increase visibility. That hope dimmed when two more birds died after becoming entangled in the wires. The request of town officials, a plan developed to re-route the lines beneath the bridge. There was one hitch: while Bell Telephone agreed to totally absorb its share of the move, Consumers Power would pay only part of its costs.

Now, more than \$11,000 has been raised by East Jordan's residents before the wires are moved. For 2,000 citizens of the small community, the two dozen swans remaining in the flock that once numbered more than 100 are well worth the effort — and the price.

Story and photograph by Jinx Sisson

