DEPARTMENT of the INTERIOR

FISH AND WILDLIFE SERVICE

news release

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EARTHWORMS NEAR HIGHWAYS CARRY LARGE AMOUNTS OF POLLUTANTS EMITTED BY AUTOMOBILES

The Interior Department's Fish and Wildlife Service has found that earthworms collected near heavily traveled roads in the Washington, D.C., area contain large amounts of lead, zinc, nickel and cadmium evidently emitted by automobiles. Lead and zinc were found in quantities that could be fatal to birds that consumed the earthworms.

Hundreds of earthworms were taken by scientists of the Service's Patuxent Wildlife Research Center from two sites along both Route 1 and the Baltimore-Washington Parkway in November 1970. Samples were collected at distances of 10, 20, 40, 80, and 160 feet from the road. Contents were ground up and sent to a laboratory at the University of Wisconsin to determine how many parts per million (ppm) of the above elements they contained.

Zinc, which comes in car oil, existed in potentially toxic quantities at all distances from the highways. The substance has been fatal to young pigs at as low as 50 ppm. Even at 160 feet from the road, zinc in earthworms reached 52.7 ppm.

Lead, contained in gasoline, is known to kill adult mallard ducks at 200 ppm, a level exceeded in the earthworms at 10 feet from the highway, although not at greater distances.

Cadmium, which is emitted from tires, was greatest at 10 feet from the highway--12.6 ppm. Cadmium has been lethal to rats at 62 ppm.

The greatest quantities of nickel, contained in oil and gas, were found closest to the road--34.5 ppm. No research has been done to determine the potential toxicity levels of nickel for other wildlife.

All of these substances occur naturally in the soil to some extent, but their greater concentrations in areas nearest the highways tends to indict automobile traffic, Fish and Wildlife scientists said.

The worms used in the study were alive when taken, but many of them "looked sick" according to a scientist involved in the collections.

In occasional instances where these substances were found in greater quantities further away from the road, Service scientists theorize that the phenomenon may have been caused by water runoffs from the highway. ..

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