

Citation: Accuweather. (12 April, 2013) . Why do Earthworms Surface after Rain? . Accessed from the web: <http://www.accuweather.com/en/weather-news/why-do-earthworms-surface-after/28916>

WHY DO EARTHWORMS SURFACE AFTER RAIN?

By Accuweather

Earthworms laying on sidewalks or streets after a heavy spring rain has become commonplace, but why do they do this ... and could they be a travel hazard?

Researchers hypothesize several reasons why heavy rain storms bring crawlers out of their soil homes.

For years scientists seemed to think the only reason earthworms came to the soil surface after a good rain was to prevent drowning in their water-filled burrows.

"This is not true as earthworms breathe through their skins and actually require moisture in the soil to do so," said Dr. Chris Lowe, Lecturer in Waste and Environmental Management, University of Central Lancashire in Preston, United Kingdom.

Earthworms are unable to drown like a human would, and they can even survive several days fully submerged in water.

Soil experts now think earthworms surface during rain storms for migration purposes.

"It gives them an opportunity to move greater distances across the soil surface than they could do through soil," said Dr. Lowe. "They cannot do this when it is dry because of their moisture requirements."

Certain species of earthworms surface to mate, but only a few of the 4,400 existing species, making it unlikely that mating is a primary reason for widespread surfacing.

Another explanation involves rain drop vibrations on the soil surface sounding similar to predator vibrations, like that of moles. Earthworms often come to the surface to escape moles.

"Rain can set up vibrations on top of the soil like mole vibrations," said Professor Josef Gorres of the University of Vermont's Department of Plant and Soil Science. "Similar to how earthworms move upwards and out of the way when predator vibrations are felt, they could move in a similar way for rain vibrations."

Similarly, humans create vibrations when "fiddling" for bait earthworms.

To coax worms from their burrows, fishermen run a piece of steel or a hand saw across the top of a stake, which causes a rubbing sound to occur as the stake vibrates.

Earthworms are then moved to the surface, much to the fisherman's delight.

A TRAVEL HAZARD?

Although there are no reports of travel disruptions or injuries due to earthworms creating slick road conditions, some researchers haven't ruled out the possibility.

"I have not heard of earthworms causing slick conditions on sidewalks, but I can believe it might happen as they exude a mucous through their skin that may cause slippery conditions," said Dr. Lowe.

CAN DROUGHT AFFECT WORMS?

It is essential that worms live in a moist environment, but during drought conditions, life is certainly more difficult for a worm.

"Earthworms dig deeper into the soil where it is moister when conditions are dry," said Mary Ann Bruns, Associate Professor of Agronomy/Soil Microbiology in the Department of Crop and Soil Sciences at Penn State. "They will do all they can to avoid extreme temperature fluctuations."



Earthworms are held up at the Mount Nelson Hotel's earthworm farm in Cape Town, South Africa in March of 2008. The earthworms are fed on kitchen waste from the hotel, which the worms process into fertilizer in their garden. (AP Photo/Schalk van Zuydam)

EARTHWORM SWARMING

New research published in the journal *Ethology* revealed that earthworms form herds, swarming together to make "group decisions," as reported by BBC.

Earthworms use touch to communicate and interact, according to scientists who performed experiments on earthworm swarms outside of soil.

Research confirmed that social cues among earthworms influence behavior.

Exactly why earthworms have come to form herds is still being investigated, but it is possible that worms swarm to protect themselves. Protection from weather elements hasn't been ruled out.