

# WHY DON'T BIRDS GET ELECTROCUTED ON POWER LINES?



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Would you ever touch a live electrical wire? Of course not because it is likely to kill you. So how come birds can sit unruffled on high-voltage power lines? What magical ability do they have to withstand such contact?

To understand that, we must first understand electrical current. Electrical current is the movement of electrons. These electrons travel from the power station to your house through the mains. They then move through the power lines, through your electronic devices and eventually return to the mains. This process takes place in a closed loop. This closed loop is necessary in order for electricity to flow. In order to move, electrons also require a difference in electrical potential. Simply put, the electrons move from a higher electrical potential to a lower one.

Imagine a bunch of balls on top of the hill. If they are not blocked they will roll down any path that becomes available. This is similar to how electrons move from one electrical potential to another. But when a bird sits on a wire both of its feet are at the same electrical potential so the electrons therefore have no reason to flow through the bird's body. No moving electrons means no electric current. The bird is safe unless it suddenly touches another electrical wire, especially one with a different electrical potential. If it does this, it opens a path for the electrons to flow a path for electrons to move through its body.

It is also dangerous for birds to sit on the wooden poles supporting the wires. This pole is buried in the ground so it has a low electrical potential. If a bird were to sit on that pole and simultaneously touch a wire, the current would once more flow from the high potential wire through the bird's body and into the low potential ground. This is the same reason why it is dangerous for humans to touch live wires since we are almost always in contact with the ground. Our bodies serve as a conductor for current to move from an area of high potential like a wire to an area of lower potential, the floor.

Our bodies make excellent electrical conductors and the result is that we get zapped. This is why workers repairing live electrical wires use insulating materials such as rubber in their clothing and equipment. Even their bucket trucks are properly insulated. These insulating materials do not conduct electricity so the electrons are blocked from flowing.

Workers who repair power lines also sometimes work while hanging from a helicopter ensuring they are not touching the ground. They still need to make sure they only touch one wire at a time though. This is why the job of electrical repair remains one of the most dangerous around which leads to our conclusion - it may be safe for birds to sit on electrical wires but humans should stay far away.

# 10 Things I'd Like To Know More About



List 10 questions you'd like to know the answers to. After, Ask your classmates and see if they can answer them.

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