

Q&A: How do animals react to a solar eclipse?

April 4 2024, by Béatrice St-Cyr-Leroux



Total Solar eclipse 1999 in France. Credit: Wikipedia, by Luc Viatour.

On April 8, many of us will be huddling behind protective glasses and feasting our eyes on a rare solar stunner. But the sun's eye-catching performance won't be the only thing on display. You may also notice our animal friends behaving oddly.

Claire Vergneau-Grosset, a professor of zoological medicine in Université de Montréal's Faculty of Veterinary Medicine, answered our questions about how the [total eclipse](#) may disrupt wildlife routines.

What is the theory behind changes in animal behavior during a solar eclipse?

Most reports of animal behavior during an eclipse are anecdotal, but it is clear that some animals do react unusually during solar events. When an eclipse occurs, even though it's technically daytime, many animals will start to behave as they normally would at nightfall and begin their typical evening routine.

Both solar and lunar tidal cycles are closely tied to a number of hormonal systems. Much ink has been spilled about the effects of melatonin on our sleep cycles, for example. But melatonin also helps regulate many other important hormonal systems in the animal kingdom, including reproductive activity, molting, hunting and feeding habits. Light levels can therefore affect wildlife responses in a variety of ways.

But behavioral changes that manifest during an eclipse are transient, so it's hard to study them or identify patterns.

What types of unusual behaviors have been reported?

Birds, mammals and even some insects have been known to exhibit atypical behaviors. For example, birds that are normally active during

the day will stop singing, just as they do at dusk. Some frogs will start their evening croaking. Bats may also wake up and take wing as if night had fallen. One report describes hippos in Africa beginning to withdraw from their daytime riverbeds during an eclipse. Some species of arthropods in South America have been seen breaking down their webs, which they normally do in the evening.

Basically, these are all typical behaviors; they're just not occurring when they normally would.

Does exhibiting these behaviors at inopportune times place some animals at risk?

The greatest threat comes from the potential increase in human–animal interactions. Typically [nocturnal animals](#) may emerge, and diurnal species return to their dens, at times when humans are still very active. It can be dangerous for both animals and humans. For example, an increase in animal roadkill was reported in the United States during one eclipse.

Waking during an eclipse might not impact healthy bat populations but it can have a [detrimental effect](#) on bats whose systems are already weakened, such as those afflicted with white-nose syndrome. As they won't be able to feed during the short period they're active during the eclipse, they are wasting precious energy.

It is said that primates are more likely to gaze directly at the sun during an eclipse. Are they at risk of eye damage?

There have been no reports of eye damage in primates following eclipses. But if I were working with primates in a zoo, I'd give them the option of returning to their indoor enclosures during an eclipse to allow

them to express their usual nocturnal behavior. But primates looking at the sun is not something that is well documented and there have been no reports of blindness. I don't think it should be cause for alarm.

How long the eclipse lasts will depend on where we are. Will animal behavioral changes be more noticeable in places where the eclipse lasts longer?

It seems plausible that animals will exhibit more extended behavioral changes in areas that stay dark for longer. But the evidence is still largely anecdotal. We don't have enough hard data to back up our observations. Cold-blooded animals, such as reptiles and fish, may experience a temporary decrease in their metabolism during the eclipse, as their internal temperature is directly affected by ambient temperatures. But I doubt that brief behavioral changes, say for 15 minutes or so, will truly impact their survival. Long-term environmental changes, such as [global warming](#), are far more likely to have lasting effects on their behavior and survival.

Provided by University of Montreal

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