



### **Sensible snoozers.**

New data show that sloths sleep only about half as much as previously believed.

Credit: Bryson Voirin

## **Sloths Aren't So Slothful After All**

By Elsa Youngsteadt  
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It's time to retract those disparaging comments about sloths: They actually *don't* sleep all the time. Sloths are certainly not insomniacs, but a new miniature brain-recording device shows that, in nature, the animals snooze a respectable 9.6 hours per day.

Researchers previously believed that sloths slept nearly 16 hours per day. That figure was based on studies of captive sloths using electroencephalograms (EEGs), which detect brain activity associated with slumber. The animals might sleep differently in nature, but good luck keeping a wild sloth wired to the usual heavy EEG equipment.

Enter the portable EEG recorder. Developed in part by neurophysiologist Alexei Vyssotski of the University of Zürich, Switzerland, the apparatus is housed in a cap that fits on top of an animal's head. Small wires placed just under the skin of the scalp detect brain waves and send the numbers to a data logger hidden inside the device.

A team led by Niels Rattenborg, a sleep researcher at the Max Planck Institute for Ornithology in Sarnberg, Germany, caught three brown-throated three-toed sloths (*Bradypus variegatus*) in Panama and installed the mini EEG recorders, a process that took about 1 hour per animal. After 5 days, the researchers tracked down the sloths and retrieved the data loggers. "The thing that really astonished us," Rattenborg says, "was that they slept just nine and a half hours per day."

It's not obvious why sloths would sleep less in nature than they do in captivity. The need to find food and look out for predators could be one reason. Alternatively, boredom or depression might increase sleep in captivity. The authors also note that the EEGs of captive sloths included some young animals, which may have needed more sleep than the adults in this study.

Rattenborg, whose team reports its findings online 14 May in *Biology Letters*, says the technology could be used to accurately gauge just how much sleep wild animals are getting. As with sloths, most of what we know about animals' napping habits comes from studies of their captive counterparts. Such data could be misleading, Rattenborg says, hindering efforts to understand the function of sleep in humans and other animals.

Chiara Cirelli, a sleep researcher at the University of Wisconsin, Madison, says the study is a "wonderful" proof that it's possible to get high-quality EEG data from sleeping wild animals. The method might also be used to gauge sleep intensity, she says, another important measure for understanding the function of sleep. "We just need many, many more" studies like this, says Cirelli. Rattenborg and his team are up to the challenge: Ostriches are next.