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Self-freezing frogs--it's true



Photo credit: Jens Gade, iStock\Thinkstock

Not self-frozen

WASHINGTON (VR)— I know what you're thinking, a frogcicle will never become the top flavor at Baskin Robins, but for the Alaskan wood frog the genetic trick has become a very important survival trait. What the frog does, according to Don Larson, a Ph.D. student at Fairbanks, is dig a shallow hole near ponds where it breeds. After the hole fills with water, it will wade in and wait until the water freezes. This trick allows the wood frog to freeze up to 60% of its body, so as to reduce calorie consumption, and allow it to survive until the Spring thaw.

"So, when we say about 60-70% of their body water's frozen, the other percent is the water really inside their cells. So, it's everything around their cells that's freezing."

Larson says that wood frogs not only practice their own form of cryogenics, but practice a form of camouflage to avoid predators

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while they are frozen.

"They make sure to hibernate under leaves so they're pretty well covered, and I can tell you from my own experience that these guys are very, very hard to find."

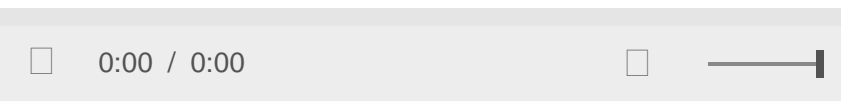
Mind you, it's not just a petal or two hiding them. They are hiding under leaves and buried under snow. Larson once spent two weeks raking, hunting for frogs, only to find two of them. That's a pretty bad payoff for 196 hours of work. It's even worse, when Larson estimates there were at least ten times that number available to be found.

Larson found that the frogs were able to lower their body temperature as far as -20 degrees Celsius without harm to their bodies or their cell structure.

"We have some evidence that they might be able to go even lower than that, but the thing that tells us is they're very hardy, and able to survive these conditions very well is we didn't see any wood frogs die."

The wood frog is not completely unique in its ability to freeze, thaw, and walk away. There are some insects who've shown this quality as well as the Siberian salamander.

The key to the survival of the wood frog may have to do with glucose... more at the audio link.



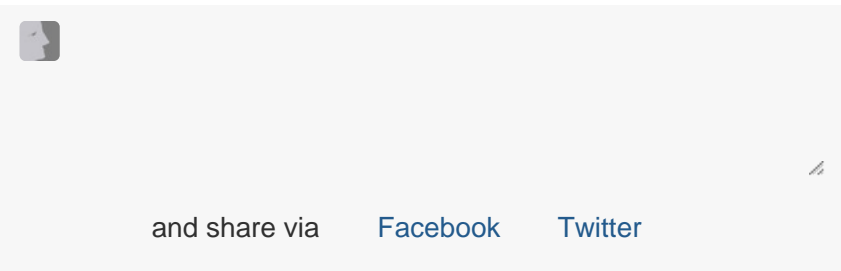
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