

## Florida Heat Reptile Quiz

### How do high temperatures affect reptiles?

*By Margaret A. Wissman, DVM, DABVP*

I am a fifth grade teacher who was given an assessment test to give to my students with no answer key. The answers are not all in the textbook. Can you please tell me the answer to this question?

Temperatures in Florida get very high during the summer. How does this heat affect reptiles here in Florida?

- A. Reptiles will not be affected because they are cold-blooded.
- B. Reptiles will not be affected because they like to sleep.
- C. The reptile population will increase a lot.
- D. The reptiles will all start to die.

Any help you can give me would be really appreciated!

Mrs. Becky Brown  
Jesse Keen Elementary School, Lakeland, Florida

Oh boy, oh boy, oh boy, Mrs. Brown, I can surely understand why you needed to resort to asking me to help you with this one! I read through this question and the list of possible "answers" several times, and I still couldn't pick one answer that I think is correct or even remotely in the ballpark of correct. Even simplified for fifth graders, I still couldn't choose one of the supposed answers!

How does the high heat of the Florida summers affect reptiles?

- A. Reptiles will not be affected because they are cold-blooded.

Reptiles are actually more accurately called ectotherms, as the term cold-blooded is outdated and somewhat of a misnomer, but for a fifth grader, cold-blooded is probably acceptable, although I would prefer that they learn the proper terminology. Reptiles maintain their preferred body temperatures by moving between sun and shade, which is a process known as thermoregulation. Reptiles normally found in Florida (also known as indigenous), have evolved to adapt to our hot, semi-tropical climate and therefore are able to hatch (or be born), grow and reproduce here.

However, even the most heat-tolerant reptile will die if it is caged and exposed to the mid-day sun, if it does not have a place to seek shade. It stands to reason that reptiles can and will be affected by the summer Florida heat under certain circumstances.

The hot Florida summers also affect reptiles as they are able to achieve their preferred optimal temperature very quickly. Many Florida reptiles breed and lay their eggs in the summer, which allows their eggs to hatch before the temperatures cool down too much in the late fall.

So, as far as I am concerned, answer A is not correct.

- B. Reptiles will not be affected because they like to sleep.

It stands to reason that many Florida reptiles do sleep during the heat of the day. Many warm up in the mornings, then find and eat their meal for the day. After that, many will find a suitable location to sleep during the hottest part of the day. Even in the shade, it is still quite hot in the summer, but again, our native reptiles have adapted and found ways to cope with the heat and humidity.

But saying that reptiles won't be affected by the heat because they "like" to sleep, and I think like is not the correct term, is incorrect as the sentence stands. I don't think reptiles "like" to sleep, but sleep is one mechanism that they use to deal

with heat. I like to sleep, too, but well...I digress. But, you get my meaning here.

I don't think answer B is the correct answer either.

C. The reptile population will increase a lot.

If this answer was correct, then we would be overrun with reptiles. Over the ages, reptiles have evolved to successfully live and reproduce within the semi-tropical climate found in Florida. Now, if we want to factor in global warming, that may eventually have an impact on the reptile population one way or another, but I don't suppose that fifth graders are expected to understand the ecology and the implications on reptile reproduction.

If we are talking about non-indigenous species, then that is another story. For example, green iguanas are not native to Florida, however, many iguanas have either been turned loose or have escaped in the Florida Keys, and now, there has been a population explosion of them there. Without many natural predators, green iguanas have flourished in the Keys. I was recently down in the Keys on vacation, and we spotted green iguanas everywhere! We saw hatchlings to adults, all thriving there. However, they are consuming the vegetation, both planted and native, at an alarming rate. The newspapers are filled with articles about the green iguana infestation and what can be done about it now. Landscapers are bemoaning the fact that it is impossible to keep any edible vegetation anywhere, as the iguanas eat the plants almost as soon as they are put in the ground.

So, I guess this answer C could be true, if it was qualified by saying that the reptile population that will increase a lot is comprised of non-indigenous species that can fill a niche in Florida habitats. Otherwise, for the most part, the reptile population remains relatively steady (except for animals threatened by loss of habitat, reptiles over-collected by herpers, reptiles suffering from poisons, pesticides and insecticides in their environments, or reptile species pushed out by competing non-indigenous species).

D. The reptiles will all start to die.

Again, if they are referring to native Florida wildlife, these animals have all adapted to life in our hot, humid climate, so that is not a true statement. Even if we suffer from drought or from an excessively hot summer, reptiles are quite well apted to dealing with these conditions, for the most part. Even with extremes in the weather, they might be able to survive or their eggs or young might survive to perpetuate the species.

If the meaning of the question was what would happen to reptiles brought into Florida from cooler or drier climates, then there is a good chance that they might die, as they would not easily adapt to the relentless heat and humidity that Florida summers bring. Otherwise, this answer makes no sense. If native Florida herps would all die in the summer due to the heat, then we wouldn't have many herps in Florida now, would we? While I often find the summertime heat oppressive in Florida, reptiles have lived and thrived here for many thousands of years.

So, answer D is clearly incorrect. No wonder why you couldn't answer it with any degree of certainty! If you have any chance to provide input regarding this assessment test, then I would hope that you would be able to show the writers of this question that this is a very flawed question, one that a vet with eight years of college, five college degrees and board certification in avian medicine could not answer!

Thanks for writing in. And thanks for educating our children; I admire you and your vocation tremendously. Your dedication to teaching shows!