**Lizard study finds global warming data not enough to predict animal extinction**

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Almost 40 percent of the world's populations of [lizards](http://phys.org/tags/lizards/) are expected to become extinct by 2080 because the earth is warming faster than these populations can adapt. Reptiles, including lizards, regulate their body temperatures by moving between warm and cool areas within their home ranges. Even a small change in body temperature can dramatically affect an organism's well-being, like when a person's temperature rises one or two degrees.

"Most models assume that an animal can be anywhere in its environment at any time, which doesn't account for how much energy an animal spends to regulate its temperature. Animals have to move and search for shade, which makes cooling down more difficult when patches of shade are far apart," said Mike Angilletta, a professor at Arizona State University and coauthor of the study.

Sears, Angilletta and colleagues from two other universities tested their computer model with real lizards near the University of New Mexico's Sevilleta Field Station, about 80 miles south of Albuquerque, New Mexico.

Over two summers, the researchers and their students fenced in nine arenas, each 20 by 20 meters square. To mimic the shade of the computer simulations, they stretched equal areas of shade cloth over each arena, but arranged the cloth differently—one big clump of shade, four medium-sized patches of shade or 16 small patches.

Each group of lizards spent two days in each environment, and their body temperatures were monitored through tiny, surgically implanted sensors. When the lizards were in the arena with one large clump of shade, their temperatures varied 12 percent more than when they were in the arena with four patches of shade, and 10 percent more than when they were in the arena with 16 patches of shade. Thus, more patches mean more careful thermoregulation.

The results corresponded to Sears' computer model. In the simulations, digital lizards experienced nine percent more variation in body temperature when shade was provided in one clump compared to either four patches or 16 patches. The lizard's behavior is like running across a hot, sandy beach in bare feet to get from a parked car to the cool sands by the ocean.

Raymond Huey, a professor emeritus of biology at the University of Washington said, “It isn't just the relative proportion of warm and cool areas that affects how well a lizard can regulate its temperatures but also how they are distributed in space.” The spiny lizards in the study regulated their temperatures much more efficiently when they had many small patches of shade, which they could easily reach to cool off, instead one large clump of shade in a wide-open space.

**Unit News Article**

Find a recent article in the newspaper or on the internet (no older than two years) that relates to the current unit. The article must be of a reading level comprehensible by the general public (i.e.-use general publications like: Discover, New Scientist, Scientific American, Wall Street Journal, New York Times, National Geographic, Press Democrat, etc. NOT highly technical). Be sure it is a NEWS source and not a TEXTBOOK type of source.

**Format**-Double spaced typed, 1inch margins, 12 point font, etc (MLA format). Attach the article to the back of your work. You may choose to do this as an oral presentation on the day it is due in lieu of a written format.

1. **Annotate the article**. 2pts

* Circle unknown vocabulary and paraphrase or define in the margin
* Underline proper nouns (names/sources)
* Highlight the key concepts and comment in the margin a summary and/or how you infer the article relates to content studied in the unit.

1. **Summarize**: Write a one-paragraph **summary** of the factual information in the article. (Who, what, when, where, how.) Make a claim/statement regarding main point of the article and support with concrete details from the article. Minimum of a half page, 6-8 complex sentences (if you can’t write that much you need to pick another article). Be sure to include concrete details from the article to support your summary. 3pts
2. **Analyze Unit Connections:** Write a one-paragraph **analysis/application**. Make inferences regarding the information in the article and use concepts from the unit as evidence. How is the information in the article an example of the concepts we are learning in class? Evaluate (judge) the importance and conclusiveness of the results. Minimum of a half page; 6-8 complex sentences. 3pts
3. MLA **Citation**: Record the author, title of the article, source it came from (title of newspaper, magazine or web source- like CNN.com; not the URL address) and dates (pub/access). Use the correct MLA reference format used for research papers-see links page for help with citations. Place the citation at the bottom of your analysis paragraph (citations on the article will NOT be given credit). Single spaced, reverse indented! See the Purdue OWL website or Bib me websites for help.1pt