

#ENTOMOLOGY

Weird Weather Keeps Butterflies Aflutter Longer

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Unseasonably warm and cold days can prolong the active period of moths and butterflies by nearly a month, according to a new study.

As Earth's climate continues to warm due to the emission of greenhouse gases, extreme and anomalous weather events are becoming more common. But predicting and analysing the effects of what is, by definition, an anomaly can be tricky.

Scientists say museum specimens can help. For the new study, the first of its kind, the researchers used natural history specimens. "The results are not at all what we expected," says Robert Guralnick, curator of biodiversity informatics at the Florida Museum of Natural History and lead author of the study in Communications Biology.

Erratic weather adds a layer of complexity to these patterns, with unknown consequences that erect an opaque screen ahead of scientists attempting to predict the future of global ecosystems.

There had been hints in the scientific literature that weather anomalies can have cumulative effects on ecosystems, but there wasn't anything that directly addressed this question at a broad scale," Guralnick says.

This omission, he explains, was due primarily to a lack of sufficient data. While climate data has been reliably collected in many areas of the world for more than a century, records documenting the location and activity of organisms are harder to come by.

Natural history museums have been increasingly regarded as a potential solution.

In 2022, co-author Michael Belitz constructed a dataset of moths and butterflies from museum collections to chart a course for other researchers hoping to use similar data. The result was a comprehensive instruction manual for how to gather, organize and analyse information from natural history specimens.

With this robust resource at their disposal, Belitz and his colleagues wanted to see if they could detect a signal from aberrant weather patterns. Restricting their analyses to the eastern United States, the authors used records for 139 moth and butterfly species collected from the 1940s through the 2010s.

Their results were unequivocal: Unusually warm and cold weather has significantly altered insect activity to a greater extent than he

average increase in global temperature for the last several decades.

The location and timing of extreme weather events influenced how insects responded. In higher latitudes, warm days in winter meant moths and butterflies became active earlier in the spring. Unusually cold days kept insects at all latitudes active longer, and the combination of exceptionally high and low temperatures had the strongest effect.

"If you have a succession of abnormally cold and warm days, it limits the ability of insects to function at peak performance," Guralnick says. "If cold doesn't kill you, it slows you down, and it might force insects into a torpor. Insects can recover from the cold snaps pretty quickly and go on to have longer lifespans as a direct result of sudden temperature declines."

Insects being active for longer periods of time might initially seem like a good thing. But rather than a counterweight to the negative repercussions of climate change, coauthor Lindsay Campbell—who studies mosquitoes, ticks and other pests—or altered insect lifespans may also mean more opportunities for pathogen transmission.

"There's a correlation between El Niño and rift valley fever outbreaks in East Africa, and there are anecdotal observations that show unusually warm or hot and dry springs, followed by a heavy precipitation event, are also linked with increased outbreaks," says Campbell, an assistant professor at the University of Florida.

Long-term ecosystem stability is also entirely dependent on the synchronized activity of its constituent parts, and plants may not respond to extreme weather in the same way as insects. If moths and butterflies take flight too early, they risk encountering plants that haven't yet produced leaves or flowers, expending their energy in a vain search for food.

And with a constantly shifting baseline for what constitutes extreme, it's unclear if insects will be able to keep pace with the changes.

"As average temperature increases, and climate variability increases, an organism's resilience is going to drop precipitously," Guralnick says. "The extreme events of today are going to become much more extreme in the future, and at some point, the capacity to buffer against these changes is going to reach its limit."



A classic example of design before utility, even before common sense which not only takes away useable space from the bedroom but also ensures an assault on the senses that one can well do without. There is a point to be made about privacy and that intimacy needs to be confined within boundaries. Listening (and more) to your room partner (no matter your relationship with them) discharging their responsibilities, loud and clear, is not an experience to be sought.



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Naturalist and wildlife conservationist

#AFRIKAA

First there was the dry. Then it rained high up and far away in the mountains of Angola. And water flowed. Life giving water filled the riverbanks and overflowed. Life giving water which itself gives up its life in a few months when it sinks into the sands of the Kalahari Desert. But while it lasted, it would be called by a name that echoes in the halls of fame which list the most beautiful places on earth – the Okavango Delta.

For those who want to read more about this wonderful place, visit the links:

https://en.wikipedia.org/wiki/Okavango_Delta

<https://theconversation.com/botswana-okavango-delta-is-erased-by-a-delicate-balance-but-for-how-much-longer-125323>

It is like my arm - our guide and boatman, Happy - told us, talking about its shape. Rain falls on the shoulder, the mountains in Angola and water flows down the arm and into the fingers only to be swallowed up by the sands of the

loved up by the sands of the Kalahari, home, among other species, to the magnificent black-maned Kalahari lions. But while it lasts, the water gives life to an entire ecosystem of plants and resident and migrant animals and birds that has no parallel on earth.

Our boatman introduced himself. I am Happy.

He said, "That is my name."

I said, "That is my state."

He gave up but first he smiled. The famous African smile, which the people of Botswana, the Batswana (Tswana people speaking Setswana) seem to represent so well. A smile that starts in the heart and spreads all over the body and shines out of the face. When the man is happy you can see that in every part of his body. Not like the smile that is on the lips, but the eyes say something else. If I could get reincarnated, I would wish to return as a boatman on the Okavango.

The Trademark Smile

We landed in Maun; my dear brothers, Ebrahim Patel and Farouk Hassan and my mentor and teacher, Prof. Salman Nadvi. We had never heard of Maun but there it was, nevertheless, proving that whether people know you or not is a mark of their knowledge or lack of it, not a reflection on your significance. Maun has a wonderful little airport

Come to the Okavango... Paradise (...1)



batting way above the average. The immigration official was anything but officious. He also had the trademark smile. Asked me how many days I wanted. I said, 'Five'. He said, 'I will give you ten.' I thanked him. On my return on the fifth day, he was again at the desk. I said to him, 'You gave me five days, but I wish I had stayed for ten.' He said to me, 'Next time you must stay for ten. But I will give you twenty. Whatever you ask me for, I will give you more.' That seems to me to be the attitude of the people of Botswana. Such warm and lovely people.

We walked around our hired car with the company representative inspecting the car and found two scratches on one side. I helpfully offered to add two more on the other side, just for balance, if the man wished, but he emphatically refused my offer. And so, we drove off to the resort where we had booked our accommodation, The Thamalakane

River Lodge. I have always wondered why African languages sound so musical. The most mundane word sounds lilting. I think it has to do with the fact that almost every word has three syllables. When you have three syllables, it makes it sound like a song. Thamalakane is not pronounced as it is written but as Tha-ma-la-ka-nay.

We were checked in by a very charming lady with once again a huge smile on her face and shown to our chalets which came with all amenities and a sign outside the door which read, 'Beware of hippos and crocodiles.' That was just in case you forgot that you were in Africa in the Okavango Delta. I don't know about wandering crocs, but I heard a hippo loud and clear late one night. So, the sign was not for scenic effect alone. One 'amenity' that the chalets have, is a four-foot-high curving wall between the bedroom and bathroom. Nothing more.

State Hospitality

The resultant potential for auditory and olfactory sensations is impressive, to say the least. One is well-advised not to eat too many baked beans or peanuts for fear of replicating the sound effects of the Battle of the Bulge. This is a classic example of design before utility, even before common sense which not only takes away useable space from the bedroom but also ensures an assault on the senses that one

At the end of 160 kilometers my bones, teeth, and brain were all rattling. Driving slowly makes it much worse so driving fast, it had to be. Once you get used to the cold wind in your eyes and your eyes have wept enough tears, your sight clears, and you see small holdings on either side of the road. Small homes with large yards.



We Age Slowly In Space

You must have noticed in a science fiction movie like Interstellar that when people go to space in come back after... say 10 earth years, they hardly seem to have aged. The process of aging in space is actually slower than it is on Earth. This is all explained by the time dilation theory. The theory says that time is a relative quantity. This means that the measurement of time between two distinct events by two different observers depends on the gravitational field in which they are and the velocity with which they are traveling.

Botswana had better come clean and quietly pay the fine unless he is seeking state hospitality. Going by the standards of Botswanan hospitality and the soft and easy-going nature of the Tswana people, I dare say that may not be an end to be feared, but I would rather pay for my keep rather than the other way around. All this by way of filling-in colour: We didn't meet any police, nor did we need to seek state hospitality.

The Code Red Area

Why do roads get corrugated? This one was. Driving fast on a corrugated road is a hard-core way to get a vibrator massage. At the end of 160 kilometers my bones, teeth, and brain were all rattling. Driving slowly makes it much worse so driving fast, it had to be. Once you get used to the cold wind in your eyes and your eyes have wept enough tears, your sight clears, and you see small holdings on either side of the road. Small homes with large yards, filled

Unlike the police in many other countries including mine, Botswanan Police strangely seem to think that the law is not open to interpretation, especially interpretation that is sought to be facilitated by the transfer of wealth from one pocket into another. Anyone who is stopped for a misdemeanour in Botswana had better come clean and quietly pay the fine unless he is seeking state hospitality.

with country chickens, ducks, turkeys and goats. There are cattle everywhere and horses and more donkeys than I have ever seen except in parliaments. And like those, these are also jealously guarded. It was told that the worst crime on a Botswanan road is to knock down a donkey. But thankfully given their lethargy and contentment with their side of the fence, the chances of knocking one down are negligible unless you set out to do this because you have a grudge against a particular beast. Where there are horses and donkeys, there are also mules. Every single animal of every kind in top condition. That is what hits you first. Sleek, well cared for animals, well fed, and well kept. I didn't see a single animal out of condition in all the many hundreds of kilometers we drove in that area.

The area is designated Code Red, meaning that it is susceptible to Rinderpest, a dreaded cattle disease that is transmitted by the Cape Buffalo which are in the forests. As such there are fences to keep them there and not allow them to wander into inhabited areas. But fences are fences and buffalo are buffalo and the inevitable happens. What being in the Code Red area means is that beef produced in this area must be consumed in this area itself and can't be transported out of the area. This is done to prevent the spread of Rinderpest to other parts of the country. Not a very happy prospect if you are a beef cattle farmer in this area but that is how it is.

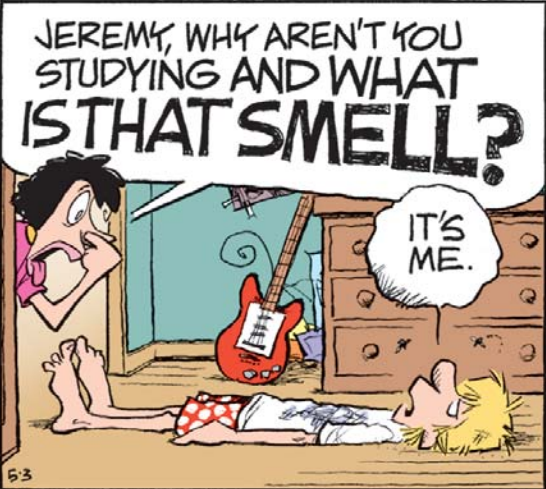
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By Rick Kirkman & Jerry Scott



ZITS



By Jerry Scott & Jim Borgman

#LIFESTYLE

Calm and Alert

The more consistently we are able to practice a variety of these routines, the greater the benefits in brain health.



We've all had those days where it feels like your head is in the clouds. Being productive is hard when your mind is going in a million different directions, leaving you unable to focus on what's in front of you.

Starting your day on the right foot can make a big difference, though. Here we share how you can do just that, and set yourself up for better focus all day long.

Wake Up at the Same Time

A good night's sleep makes us feel rested and focused for the day ahead. Waking up in the morning is just as important as when you hit the pillow at night, and consistency is key.

Practicing good sleep hygiene habits increase the odds that you will wake up refreshed with energy to tackle the day. Consistent sleep and wake times to jump-

little quiet time (more on those in a moment) before your responsibilities kick in for the day.

Drink Caffeine in Moderation

Drinking coffee or tea is a popular morning habit, and as long as you aren't prone to anxiety moderate amounts of caffeine can be beneficial for focus and concentration, per Weidman.

According to a December 2015 report, drinking coffee (or any caffeinated drink) can cause a jolt of alertness. In moderate quantities, coffee can help you focus and fight off fatigue.

Get Some Sunlight

When you wake up, open those curtains and start your day with lots of light, if possible, to improve your focus naturally, Weidman says.

It is a mood boost, as sunlight triggers a release of the "feel-good" neurotransmitter serotonin and causes a release of our

Eat a Healthy Breakfast

There's a reason breakfast is often called the most important meal of the day. A healthy breakfast can give your brain nutrients to stay sharp and should include protein, complex carbs, a little fat and a fruit or vegetable.

A few healthy breakfast recipes for better focus include:

- Oatmeal topped with fresh fruit and nuts (or nut butter)
- Whole-wheat toast topped with avocado and smoked salmon
- Scrambled eggs with whole-wheat toast and a side of fruit.

improves our sleep quality if finished at least two hours before bed.

Delay Screen Time

Lastly, consider your relationship with your phone and other technology in the morning. Are you in charge of it, or is it in charge of you?

Find ways to cut down on using technology in the morning and see what happens to your stress levels and ability to be present and stay focused.

The above improvements result from a boost in serotonin, feeling more mentally refreshed from restorative sleep, increased blood flow through our body, reduced distractions and a calm but alert brain.

Have Quiet Time

A morning routine that includes taking a little time to quiet yourself before starting the day is another great way to be more focused.

Focus and concentration improves when you're calm, but also alert. A few minutes of morning meditation or breathing exercises to start your day and centre yourself.

Meditation practices help us develop the ability to be present in the moment, which is a key component in being able to stay focused.

