

NATURAL SELECTION IN ACTION

In September 2017, Hurricanes Irma and Maria tore through the Turks and Caicos Islands. When researchers compared the local anole lizards (*Anolis scriptus*) before and after the storms, they noticed something striking: survivors had shorter hind toes, bigger toepads, and different limb proportions. It looked like natural selection caught in the act, but back then it was an observation and a hypothesis, not proof.

Almost a decade later, a new study in *Current Biology* (1) has traced that shift all the way down to the genome. Scanning DNA from lizards on two separate islands, the team found parallel signatures of selection converging on a single gene, *hs6st1*, already known for its role in limb development. Lizards carrying certain variants had shorter fourth toes on their hind feet.

To prove the gene actually drives the trait, the researchers used CRISPR to knock it out in a related anole species, and the toes came out shorter, occasionally missing entirely. Then, in a custom wind tunnel blasting hurricane-force gusts, they showed that shorter toes genuinely improve clinging performance: better leverage, better grip, better odds of surviving the storm.

What started as a sharp field observation is now a complete case study in adaptive evolution, from environmental pressure, to genomic signature, to functional proof, to real-world survival. Natural selection, documented twice: once in the field, and now in the genes.

1. [https://www.cell.com/current-biology/fulltext/S0960-9822\(26\)00887-0?returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS0960982226008870%3Fshowall%3Dtrue](https://www.cell.com/current-biology/fulltext/S0960-9822(26)00887-0?returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS0960982226008870%3Fshowall%3Dtrue)