

Unable to Land in Water, Some Birds Sleep While Soaring Over the Ocean

By Paige Towers • October 5, 2016 at 8:55am

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Despite their seabird status, tropical are unable to float because their feathers aren't waterproof. Considering their migration patterns take them across thousands of miles of ocean, the birds' evolutionary plight seems at least a little unfair — like a Frenchman who's lactose intolerant or a southern Californian who has developed an allergy to kimchi tacos. But in all seriousness: How do the birds not drop from exhaustion? And, without an ocean surface or tree branch to rest upon, how do they sleep?

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frigatebirds

First, some brief information about frigates: Found across all tropical and subtropical oceans, the birds weigh around two to four pounds and survive on a diet of flying fish. Frigates have the largest wingtoweight ratio of any bird, anywhere (some birds have wingspans that measure as wide as 7.5 feet) and they're often seen hundreds of miles out in the middle of the ocean, gliding away. Odd because their wings aren't waterproof and they therefore can't set down for a breather as

other seabirds do. This piqued the interest of a team of scientists who wondered just how the birds survive the long journey.

So, funded by the

French National Centre for Scientific Research

, the team strapped transmitters to 50 birds they managed to catch at Europa Island, an island off the coast of Mozambique. The scientists then kept a digital eye on the birds, taking note of location, altitude, heartbeats and the frequency of which they beat their wings. Their results were published in the journal

Science .

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The study revealed that many of the birds traveled roughly 255 miles per day and sometimes went nearly two months without landing. How? Well as it turns out frigates' enormous wings allow them to ride winds and clouds while expending very little energy. Furthermore, during the long journey on which

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they were tracked, frigatebirds are able to put themselves on autopilot for
short periods of time and sleep midflight.

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The data also revealed that frigatebirds follow a rollercoaster flight pattern — meaning they glide up and down on wind drafts without beating their wings, thus barely raising their heart rate. In fact, data shows short periods of total inactivity, which would suggest that the birds nap for a few minutes at a time while ascending to very steep heights up to 3,000 or 4,000 meters. Once they've reached their peak height, the birds begin their long gliding descent again. Neat, huh?

While the reason why frigatebirds are able to slip into sleep and still remain airborne is a bit of a mystery, one thing is certain: The seabirds' lack of waterproofing may just be an advantage, as it prevents them from having to set down and take their chances with the sharks.