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News & Comments

Researchers Analyze Penguin DNA And Find Astonishing Results

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For so long, penguins have suffered from climate change. As the planet's temperatures rose and fell, their bodies specialized for some of the most extreme conditions.

In spite of this, experts are concerned that penguins' evolutionary paths may be stalling, as they have the lowest evolutionary rates among all birds. An international collaboration of researchers has conducted the most comprehensive studies of penguin evolution. Approximately three-quarters of all flightless bird species have already gone extinct, as shown in a recent study. The authors of the study write those iconic birds evolved into specialized marine predators more than 60 million years ago. In today's world, they are well adapted to some of the harshest conditions.

Penguins, however, are placed in a vulnerable position in a rapidly warming world because of their evolutionary history.

Crown penguins are estimated to have evolved 14 million years ago, about 10 million years earlier than the genetic analysis suggested. During this time, global cooling occurred during a climate transition known as the middle Miocene. During the past three million years, Living penguins have diverged into different genetic groups.

After dispersing across Zealandia, the penguins hitched a ride on the Antarctic Circumpolar Current to Antarctica and South America. It has been found that almost all penguin species were physically isolated during the Last Glacial Period.

The evolutionary rates of 17 different bird orders were closely related using several genetic signatures. According to the team, aquatic birds evolved at a slower rate than terrestrial birds, so adopting an aquatic lifestyle might be associated with a slower evolutionary rate. Furthermore, they believe that birds living in cooler climates evolve at a slower pace.

Compared to other species of birds, the ancestral crown penguins evolved at a faster rate than today's living penguins, but even then, it was relatively slow.

KEYWORDS

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