

With fewer than 50 adults remaining, Rice's whales carry a secret record that could rewrite what survival looks like

May 15 2026, by Sayan Tribedi



Aerial photo of a Rice's whale in the Gulf of Mexico. The rare whale was recently determined to be a distinct species from the similar Bryde's whale. Credit: National Oceanic and Atmospheric Association (NOAA)

Baleen plates serve as whale diaries, preserving years of hormonal data. A [new study](#) in the journal *PLOS One* shows that, with so few Rice's whales left, the hormones locked in those plates offer clues about the species' stress levels and breeding cycles.

Rice's whale (*Balaenoptera ricei*) is an ocean treasure—and it's disappearing fast. Fewer than 50 adults remain, making this newly identified Gulf of Mexico whale the world's most endangered baleen species. How can scientists piece together the life of an animal we rarely see? The answer turned out to be surprisingly literal: the whale's own baleen plates. These long, nail-like filter combs grow from the whale's gums and quietly [archive its hormones](#) over time.

Nature's time capsules: A glimpse into whale lives

Imagine a journal that changes with you, keeping a silent record of the greatest events in your life. In the case of Rice's whale, its baleen plates do exactly that. They are not teeth, but rather strips of soft nails suspended from the whale's top jaw. They act as a comb for filtering food from the ocean.

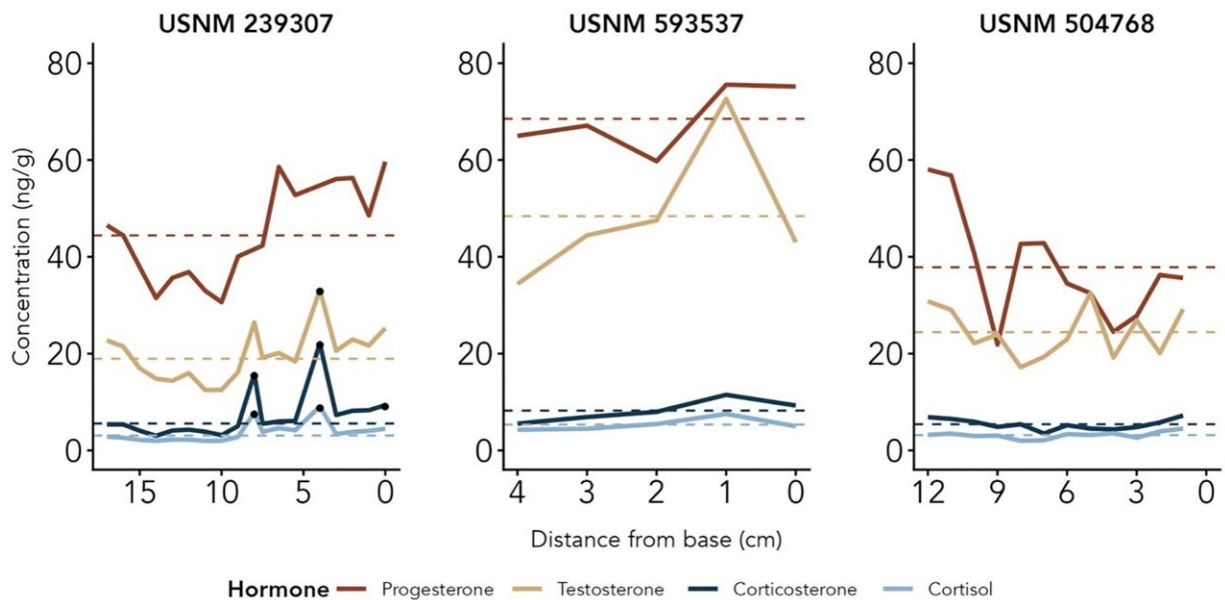
But that's where it gets really interesting—as these plates continue to grow from the whale's gums, the hormones present in its bloodstream get deposited into the plates, just like tree rings. But rather than containing information about the environment, this record keeps track of what was going on inside the whale over the years of growth, making every baleen plate a time capsule.

Such occurrences have previously been observed in other species of whale. There have been correlations between the occurrence of increased hormones in baleen and life-changing incidents for the whales, such as pregnancy or periods of high stress. The scientists made use of this remarkable resource in their study.

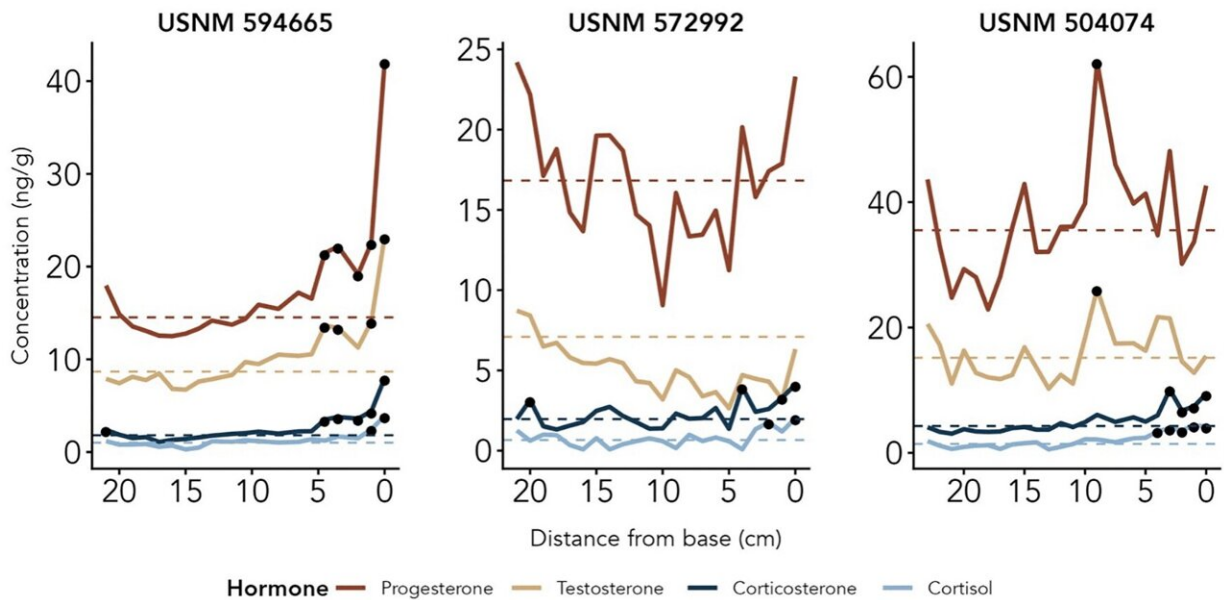
Small samples were surgically drilled from the baleens of seven deceased Rice's whales, four of which were male and three female. These samples, collected at an interval of 1 centimeter (corresponding to about 15 to 30 days) in each whale, were then examined for hormones, specifically looking for progesterone, testosterone, cortisol, and corticosterone.

The price of survival: Hormones of distress

The baleen of two of the whales provided an especially poignant tale. Both were discovered in a state of extreme starvation during their stranding event. The hormone measurements obtained from these whales' baleen plates illustrated a startling trend: a sharp rise in all four hormones just prior to death (see image above).



Juvenile Rice's whale hormone profiles. Credit: *PLOS One* (2026). DOI: 10.1371/journal.pone.0347749



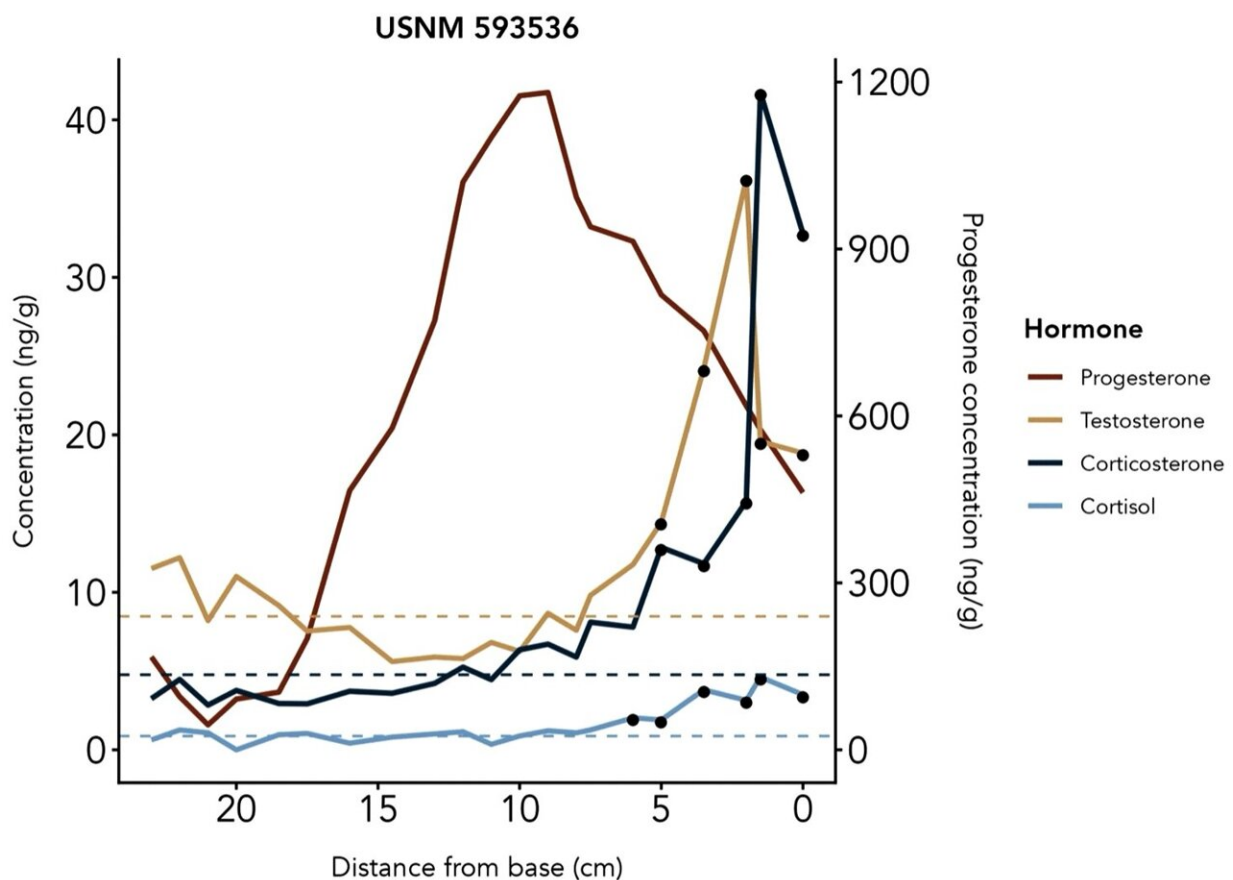
Adult male Rice's whale hormone profiles. Credit: *PLOS One* (2026). DOI: 10.1371/journal.pone.0347749

The phenomenon known as the "moribund" pattern, where stress hormones increase as the whale becomes progressively more ill, is consistent with similar studies on other baleen whale species experiencing chronic disease or trauma. According to the researchers, their examination of glucocorticoid (GC) levels within the baleen plates suggested an increase at the base for whales who had suffered before dying.

In other words, when a Rice's whale is starving or suffering from an extended illness, it will have a great surge of hormones such as cortisol and corticosterone. The high level of these hormones will be permanently imprinted on the last layer of the whale's baleen. This new finding offers a useful method to evaluate the physiological effect of prolonged stressors on this endangered species, even after death.

Breeding clues

The end of reproduction clearly marks the other end of life. One female's baleen contained a continuous run of very high progesterone, an essentially months-long pregnancy signal. On the other hand, the adult males exhibited neither evident peaks of testosterone. The breeding season for most baleen whales is noted for rising hormones in males. The Rice's whale—feeding year-round in warm Gulf waters—appears different. The testosterone of these animals remained fairly steady, suggesting mating at any time of year.



Adult female Rice's whale hormone profile. Credit: *PLOS One* (2026). DOI: 10.1371/journal.pone.0347749

In all, the baleen diary established a pregnancy and proposed that these whales do not have a single mating season. This small sample also proved powerful. According to the team, "The analysis of baleen hormones can be a method to clarify life history patterns in this endangered species." With so few whales left, every piece of baleen is now valuable information.

Researchers look for novel ways to track Rice's whale health and reproduction over time, and one possible way is to treat baleen as a hormone diary. Ultimately, testing gives them clues even though they have almost disappeared, as long as we can interpret them.

More information: Rebecca G. Evey et al, Baleen hormone analyses reveal stress and reproductive life-history of the critically endangered Rice's whale (*Balaenoptera ricei*), *PLOS One* (2026). [DOI: 10.1371/journal.pone.0347749](https://doi.org/10.1371/journal.pone.0347749)

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