

MEDIA RELEASE

Southern Right whale mothers dropped 23% in body weight

From June to October the southern right whales give birth and nurse their calves in protected bays along South Africa's southern Cape coast. The first aerial survey for 2023 on 28 August revealed 556 mothers with calves (1,112 whales) between Hermanus and Witsand.

"It's a good year for the southern right but regrettably the numbers are misleading, and I can guarantee that next year won't be good because the whales are calving every four to five years instead of every three," says whale specialist Dr Els Vermeulen from the Mammal Research Institute's (MRI) Whale Unit in the Department of Zoology and Entomology at the University of Pretoria.

"The breeding females have dropped 23% in body weight since the late 1980s because of a reduction and fluctuation in krill populations in the southern right whales' feeding grounds in the Southern Ocean of the Antarctic. Their main diet is krill, a tiny crustacean, and they feed on it in the summer there," Vermeulen explains.

This has led to worrying changes in their reproduction and body condition, particularly over the past 13 years. It needs further research but it seems that ocean warming decreases suitable habitat for krill to reproduce, which correlates with changes in sea ice conditions due to climate change.

To offer perspective on the southern right whale numbers, in 2016 the annual October aerial count by the MRI Whale Unit from Plettenberg Bay to Muizenburg revealed 55 mothers with calves (110 whales), which was the lowest count in 54 years. Then in 2018 it went up to 702 mothers with calves (1,404 whales) and in 2020 the count went down again to 80 (160 whales).

"We are confident our counts are reliable because we run two aerial surveys – one in September in a gyrocopter where I accompany marine photographer and pilot Jean Tresfon, and another in the first week of October in a helicopter from Plettenberg Bay to Muizenburg. Our unit has done the October survey since 1969, counting and photographing every single southern right whale. It is one of the longest database monitoring in the world on any marine mammal."

It is essential that the whales get their fill of krill as research indicates that conception is between February and April in Antarctica at the end of the feeding season. If they haven't gained enough weight, a number of females won't conceive. The whales do also feed on other tiny crustaceans like copepods, which occur at mid-latitude, just south of South Africa. The copepod populations are more abundant but are a relatively small part of the southern right's diet compared to krill.

The drop in krill has further resulted in pregnant females and mothers not carrying sufficient fat or energy reserves to see them through the nursing season as they don't feed in our waters. "Because of this, it appears that the cow-calf pairs are leaving our waters earlier for Antarctica because the females cannot sustain three months of lactating with their reduced body weight," Vermeulen explains. The demand on the mothers is significant as the calves drink up to 600 litres of milk per day and grow 3cm per day.

One of the MRI Whale Unit's PhD students is studying the impact of the calves leaving before they reach the desired length of eight metres at about three months. Similar trends are being recorded in South America and Australia. "Our concern is that relatively little is known about whale behaviour because of the complexity and expense of researching these mammals," says Vermeulen. "Scientists are trying to do as much research as possible into climate change and the krill reserves as this is a major problem for all krill predators, including humpback whales, penguins and seals."

In 2022 the MRI Whale Unit satellite-tagged 11 adult female southern right whales in Walker Bay to better understand their migration and feeding behaviour. Research of this kind is paramount given the evidence of drastic changes. "The tags will provide us with data for about a year and after two years the whale's body expels the tag. We are very keen to analyse the year's data later this year," Vermeulen explains.

The tagging project is run in collaboration with the National Oceanic and Atmospheric Administration (NOAA), University of Washington's Cooperative Institute for Climate, Ocean and Ecosystem Studies (CICOES/UW), and the Marine Ecology and Telemetry Research (MarEcoTel). Funding for the tags was provided by WWF Protecting Whales & Dolphins Initiative, a private donor and the MRI Whale Unit.

"The southern right whales are flagships of an important message about large-scale environmental changes in the vast Southern Ocean, which is also affecting many other marine species. They need our attention and help to ensure they can continue to thrive into the future in an ever-changing ocean," Vermeulen concludes.

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Images:

1. *Dr Els Vermeulen and gyrocopter pilot and marine photographer Jean Tresfon*
2. *Dr Els Vermeulen photographing southern right whales during the September aerial count*
3. *Southern right whale mother and calf in the De Hoop Marine Protected Area. (Credit Jean Tresfon 3mb)*
4. *Southern Right and newborn calf on the southern Cape coast during the September 2023. (Credit Els Vermeulen count)*

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