

How Do You Count Lions?

Year 8 - Mathematics



The Lion Recovery Fund

The population of lions in Africa has dropped by half in the last 25 years.

The Lion Recovery Fund works with partners such as the Zambian Carnivore Programme to work with local communities, scientists and policy makers to restore and conserve the Lion's ecosystems.

To make sure they are making the best conservation decisions, they use research data to inform their practice.

Let's explore some of the data they collect on lions.



Tracking With Collars

Knowing where lions are is half the battle for conservationists. Usually just one lion in a **pride** or a **coalition** is collared. These groups will stay together, and by knowing where one lion is, you can assume you know where the group is.

The collars are a thick band fitted around the neck with both a VHF (radio tracking) and GPS (satellite tracking) transmitter.

The collars last around 2 years. The GPS location is recorded every 4 hours, and once a day that data is uploaded to the satellite. The VHF signal can be picked up with an antenna for real time tracking.





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Neck Measurements

When a lion is immobilised for a collar to be fitted, the researchers take this opportunity to collect other data as well.

One measurement they take is the neck measurement. This provides information about the lions physical condition. Bigger measurements means the lions are eating well and are in better physical condition.

It also lets the researchers know what size collar they can expect to need when this collar needs replacing.



Whisker Spots

To get an accurate count of lions, you need to be able to tell them apart so you don't count the same lion multiple times.

Whiskers grow from small holes in a lion's snout, and it's these holes that are distinctive for each lion. Lions have four or five rows of whiskers, but it's the two top rows that are unique for every lion.

The second-from-the-top row of whiskers is known as the reference row or "complete" row, since it has more holes than the top row, which is known as the identification or "incomplete" row.



Camera Traps

Immobilising lions provides excellent and important information for lion conservation however it isn't without risk.

A much lower impact method of collecting data is to use motion sensor cameras. These cameras are set up to take photographs and/or video when they detect movement in front of them.

These cameras can take thousands of photographs and not only capture images of the intended species (lions), but also other animals, including humans, who walk past.



Other Methodologies

Here are some more methods used to collect data from lions:

Body measurements - to track health and growth overtime

Blood draws - for disease analysis

Tissue samples - for DNA and genetic analysis

Capture, mark, re-sight (where a group of animals is caught, counted and marked, then released, and then recounted from a distance the following day) - provides more accurate population counts

Spoor (footprints, scats, hair) - used to track presence and collect swabs for genetic profiles

Direct observation - to observe and record behaviour, prey selection, and prey species, social dynamics etc.

Citizen science - data (sightings, photographs etc) collected by non-researchers, including locals, tour guide operators and tourists.

