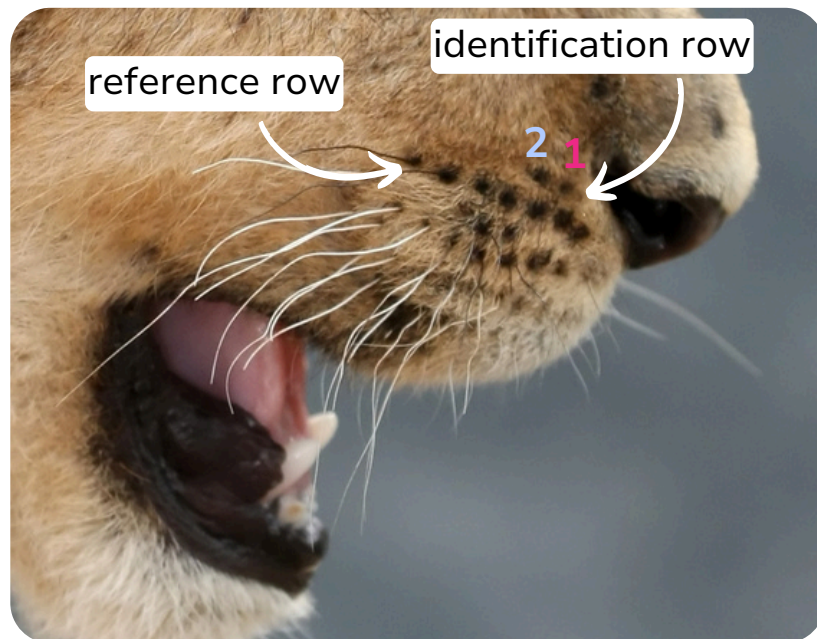


Whisker Spot Patterns

Whiskers grow from small holes in a lion's snout, and it's these holes, not the whiskers themselves, that are distinctive for each lion. Lions have about four or five rows of whiskers, but it's the two top rows that are unique for every lion. These rows act as their "fingerprint" that **conservationists** use to identify specific lions.



How does it work?

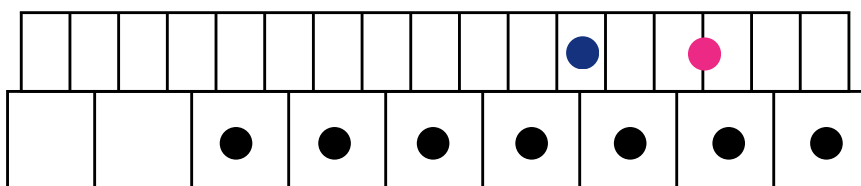
Researchers look at the top two rows of whisker holes. The second-from-the-top row of whiskers is known as the **reference row** or "complete" row, since it has more holes than the top row, which is known as the **identification row** or "incomplete" row.

In this photo of a cub we can see the right side of its face. So we start with R.

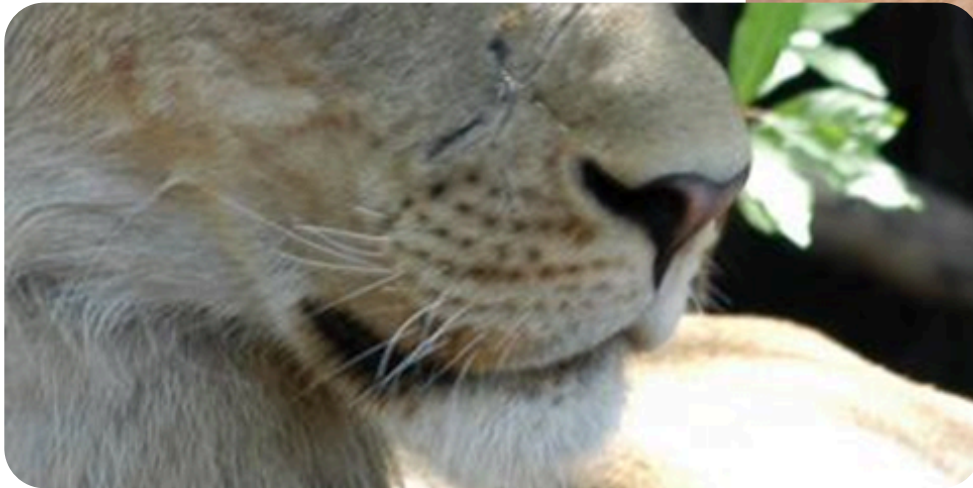
In the identification row 'A' we can see 2 whisker holes, so we record RA2. In the reference row 'B' we can see 7 whisker holes, so we record RB7.

So this cub's identification is: **RA2**
RB7

For more accuracy, we can also record the whisker spots in a grid pattern. We start counting at the nose, and work back towards the face. Spot **1**, is one quarter of the way between spots 2 and 3, so it sits on the line before the halfway box. Spot **2** is halfway between spots 3 and 4, so it sits in the middle of the halfway box.



Some lions can also be identified by distinctive markings. The lion shown here has distinctive scarring on his muzzle, as well as a distinctive pigmentation spot pattern on his nose. These marks are useful, but can change over time.



What are the benefits of whisker spot identification?

- Being able to identify individuals provides more accurate information about population sizes, allows researchers to associated observed behaviours to specific individuals to track patterns or preferences, and provides insights to **social dynamics**.
- Collecting data on whiskers spots is non-disruptive to the animal. It can be done from a distance with a telephoto lens, up close with camera traps.
- Researchers can use **citizen science** photographs to identify animals, and gain valuable information.

What are some of the risks of whisker spot patterns?

- You need to be able to get close enough, or get a good enough photograph to be able to see the spots clearly.
- It relies on human judgement. Where one person might see 3 spots a space then 4 spots, another person might see 7 dots in a continuous row.
- If a lion is injured on their face, it can impact successfully identifying them, however often new scar patterns can be used alongside whisker spot patterns to identify animals.



Vocabulary

conservationists - people who work to conserve the environment, including paid roles, students, volunteers, and the general public.

citizen science - contributions to scientific research made by the general public.

identification row - the top row of a lion's whisker holes.

reference row - the second row of a lion's whisker holes.

social dynamics - how animals, in this case lions, interact with each other.

Practicalities

What are the costs involved in this method? (materials, resources, etc.)

What are the personnel requirements? Break your answer down into the different steps in this method and what level of expertise and how much time is required for each step.

Implications

What questions is this method of data collection trying to answer?

What might the flow on impact be for conservation of lions?



Lion Identification

Below are some photo of lions taken by citizen scientists in Zambia. To the best of your ability, complete the Identity grid by placing dots to represent the whiskers.



LA:

LB:

ID:



LA:

LB:

ID:





LA:

LB:

ID:



LA:

LB:

ID:



LA:

ID:

LB:

Use the identification cards below and see if you can match the lions above with their Lion ID

Site	ID:	Group Name:	Sex:	Date of Birth (+/- error)
Kafue	KLI-656	Machine Boys Coalition	Male	1 December 2015 (+/- 2 weeks)

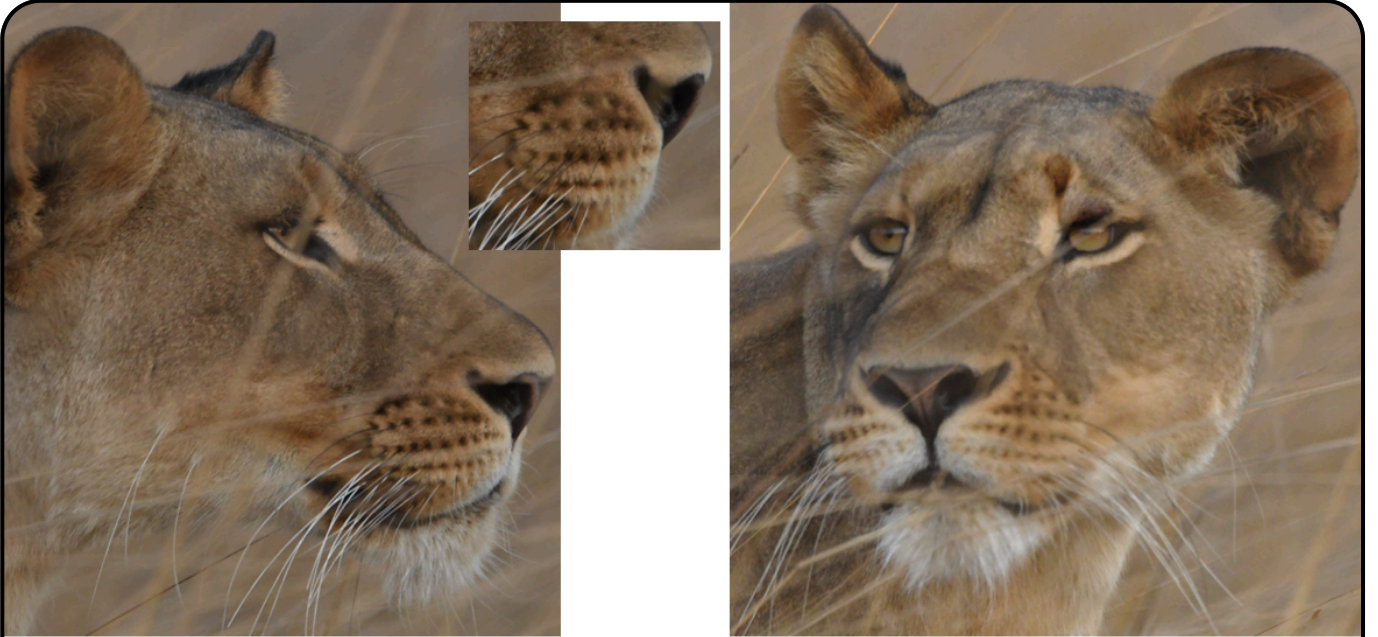
Site	ID:	Group Name:	Sex:	Date of Birth (+/- error)
Kafue	KLI-2228	Eden Pride	Male	27 December 2023 (+/- 1 day)



Site	ID:	Group Name:	Sex:	Date of Birth (+/- error)
Kafue	KLI-1221	Pinnon Pride	Female	5 August 2015 (+/- 6 months)



Site	ID:	Group Name:	Sex:	Date of Birth (+/- error)
Kafue	KLI-2230	Pinnon Pride	Unknown	15 November 2023 (+/- 1 week)



Site	ID:	Group Name:	Sex:	Date of Birth (+/- error)
Kafue	KLI-2178	Ntemwa Pride	Female	22 August 2020 (+/- 6 months)

Questions

How certain are you that you identified each lion correctly? Very Mostly Not at all

What made it difficult to judge which lion was which?

.....

.....

What could we do with this data to make it more useful?

.....

.....

What does this data tell you about the lioness that the data was collected from?

.....

.....

What displays could we make from this data to help us understand it better?

.....

.....

Is this sample size large enough to draw comprehensive conclusions from?

.....

.....

Write a conservation message aimed at students from your school based on this data.

.....

.....



Data Display

Looking at the data provided, and your answers in the 'Implications' section, what type of display would be best for interpreting the data and communicating your findings?

Create your display in the box below: