

DETERMINING THE AGE AND SEX OF AN ELEPHANT

Photo by Rob T. Smith - iStock.com



MONITORING THE
ILLEGAL KILLING
OF ELEPHANTS

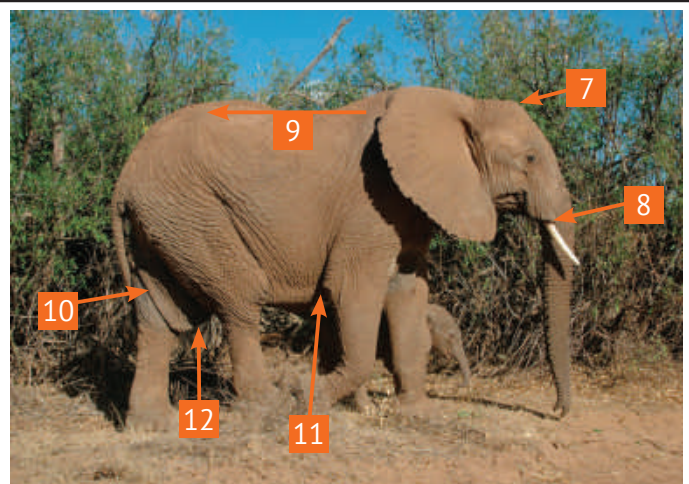
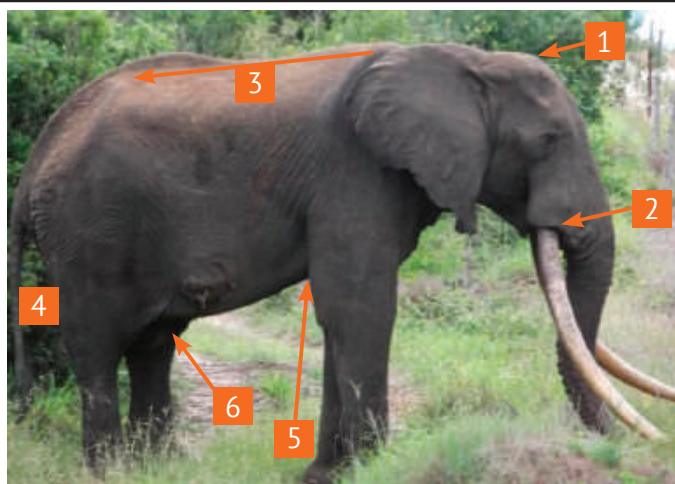


MALE

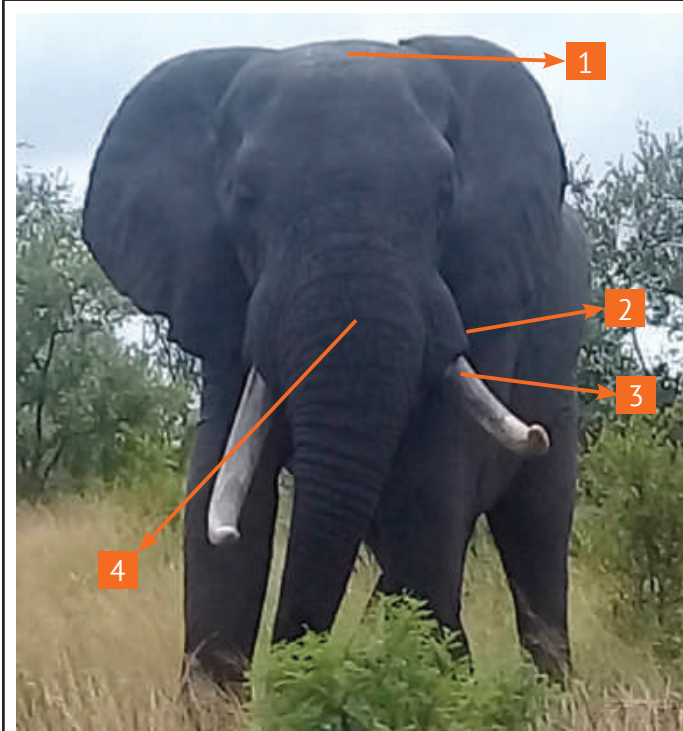
FEMALE

BODY

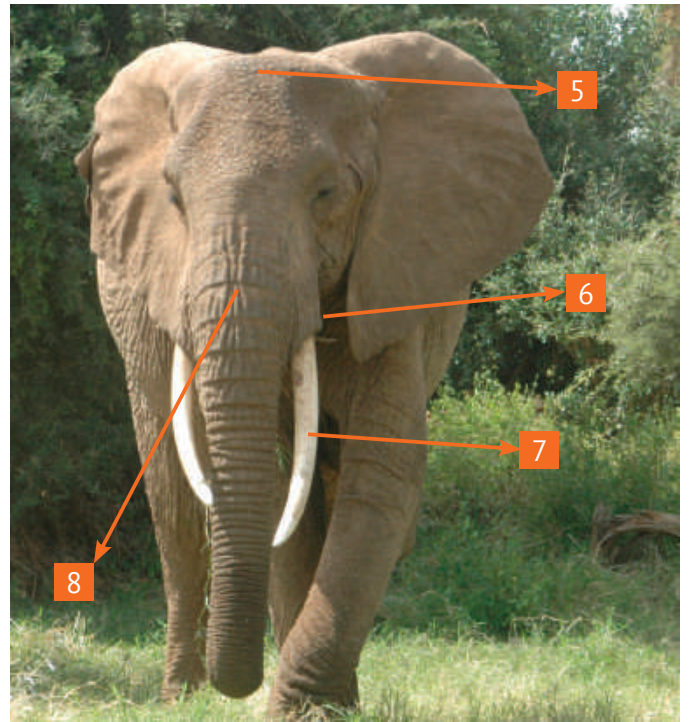
1. Forehead broad and profile rounded in appearance	7. Forehead narrow and angular profile
2. Swollen tusk base (adult)	8. No swollen tusk base as in males
3. Back bone slopes from shoulder to rump; relatively short compared to female; visible in sub-adults and adults (> 8 years)	9. Elongated back compared to male, visible on females above 15 years old; dipped / curved spine becoming prominent with age
4. Belly fold not present	10. Belly fold / sheath covering genital present (>20y), become more prominent with age
5. Nipples present with no swelling of mammary glands	11. Swollen mammary glands (>10y)
6. Genital opening facing forward, erect penis opening facing front	12. Genitalia opening facing directly downwards, erect clitoris facing backwards



ADULT MALE



ADULT FEMALE



1. Broad rounded forehead

2. Swollen tusk base, curving up

3. Splaying tusks

4. Broad trunk base, which becomes broader with age, very wrinkled compared to female

5. Angular forehead and not as broad as in males

6. No swollen tusk base

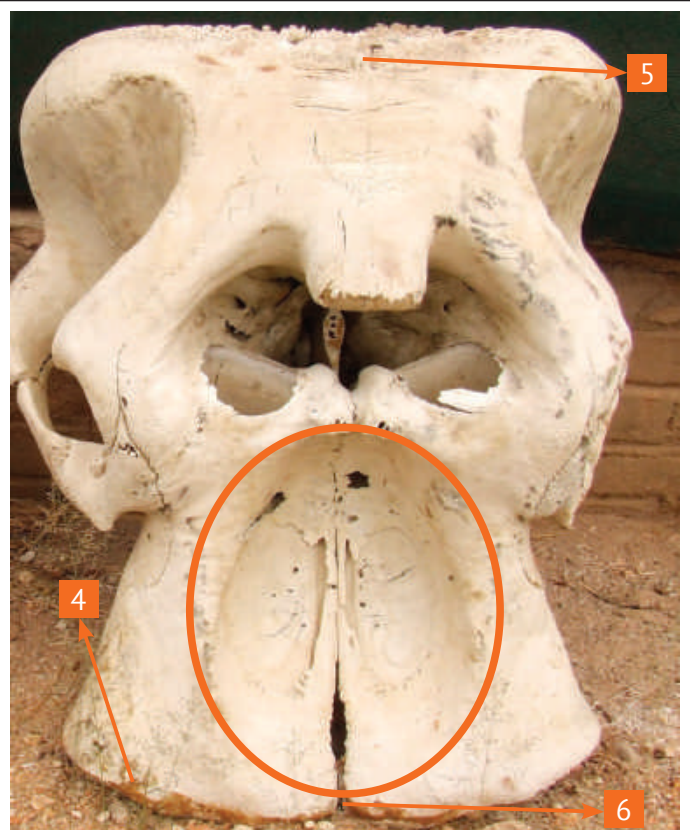
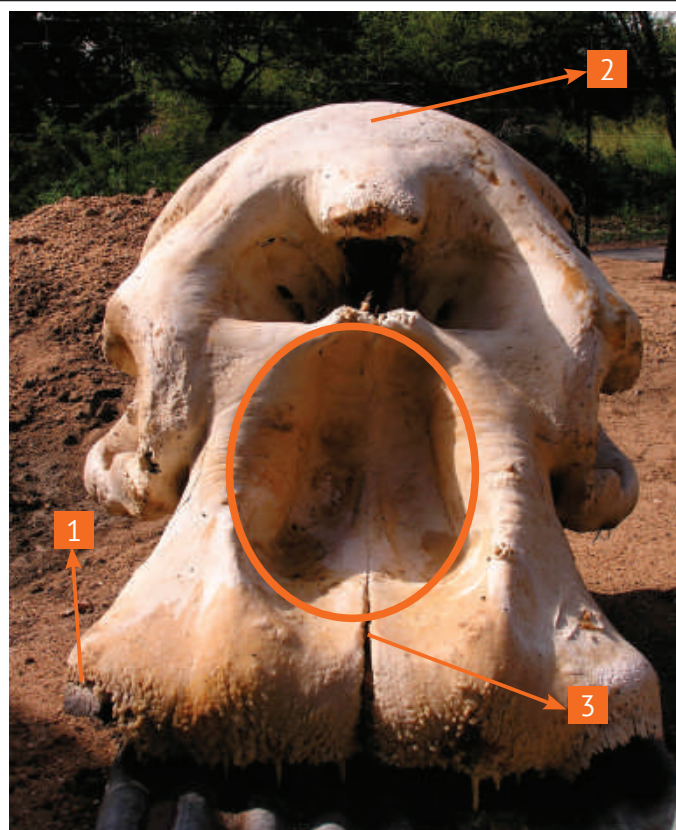
7. Tusks placed relative straight in skull. In some instances no splaying as in males

8. Base of trunk remains narrow compared to the forehead

MALE

FEMALE

SKULL



1. Tusk cavity curved upwards (outwards) from base opening (>3y)	4. Tusk cavity is straight, no curve upwards or outwards
2. Skull showing rounded forehead	5. Skull showing angular forehead
3. Nasal base: No depression visible until approximately 17 years of age. A depression forms between 18 to 30 years. Above 30 years the bowl splits into two, with two deep bowls forming, one on each side of the base.	6. Nasal base: No depression visible until approximately 20 years. The shallow depression develops from about 21 years and becomes prominent with age but does not split into two bowls as significantly as in males. The depression also more shallow than that of males.



Lip bone on lower mandible is long, thick and attenuated as observable in males from the age of 3 years (V-shaped at tip)



Lip bone on lower mandible is narrow, slender and elongated. Does not attenuate as in males (Female: U-shaped with distinctive tip)

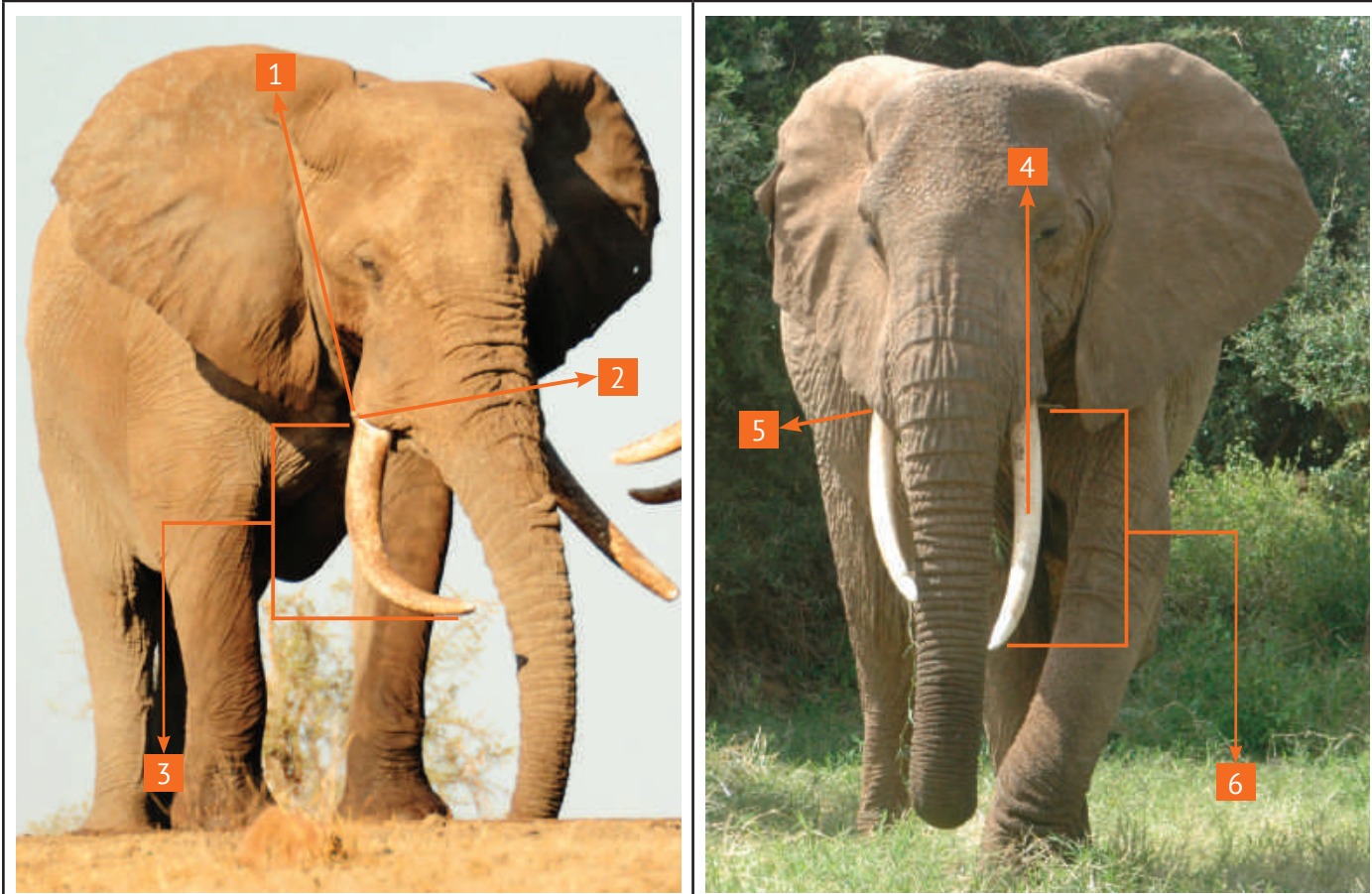


Lateral view of lower jaw – the distal end of the jaw bone is straight or turns slightly downwards



Lateral view of lower jaw – the distal end of the jaw bone turns more upwards than observed in males

MALE	FEMALE
TUSKS	
1. Tusk curve from inside the socket ($> 3y$), giving splayed appearance (towards outside and to the tip of tusk)	4. Tusk curve (slightly)
2. Lip line smaller than base of tusk ($> 3y$)	5. Circumference at lip line almost equal to that of base of tusk
3. Attenuate from tip to base (narrow to broad)	6. In general, tusk has a more or less standard diameter along most of tusk (tip to base)



These tusks (photo) have been marked, measured and weighed. A unique code must be given to each tusk and recorded. Tusks must be stored in a secure location.

MALE

Base of tusk is thick and the tusk becomes narrower to the tip

FEMALE

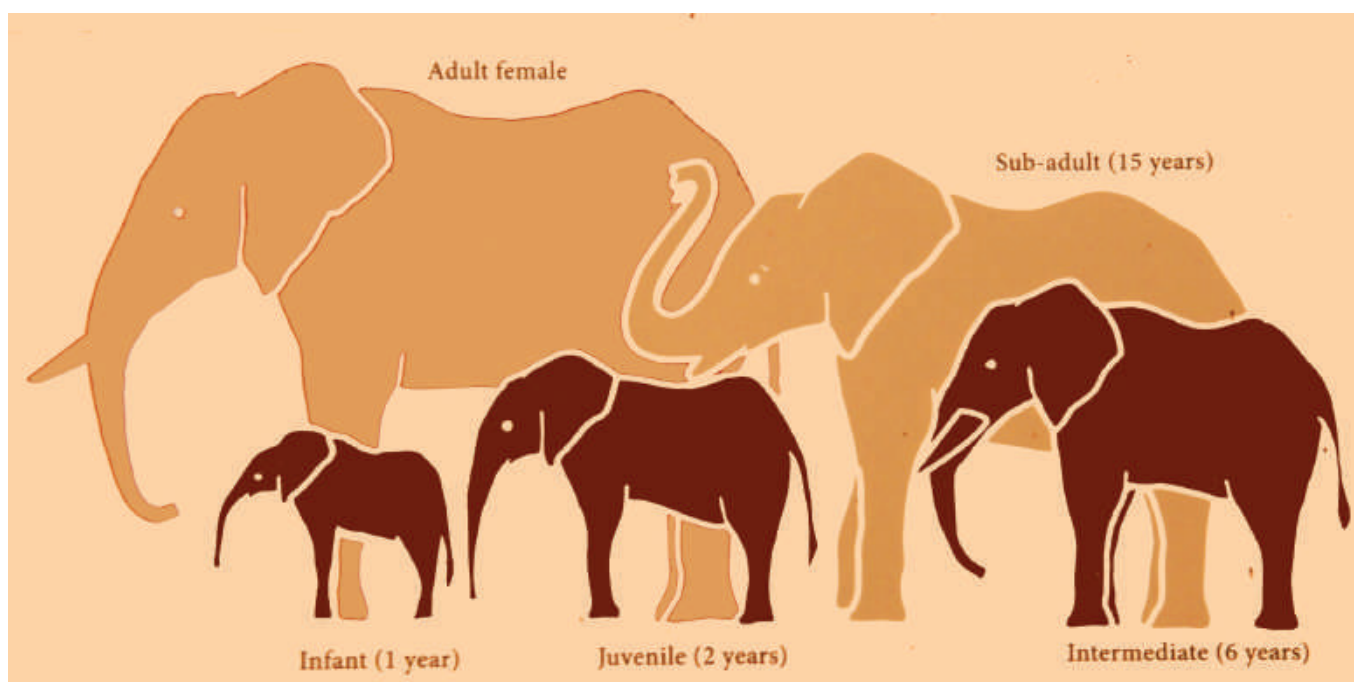
Base of tusk is slender and tusk has a standard diameter along the length of the tusk

USING THE HEIGHT OF AN ELEPHANT TO DETERMINE THE APPROXIMATE AGE OF A DEAD ELEPHANT

AGE CLASS



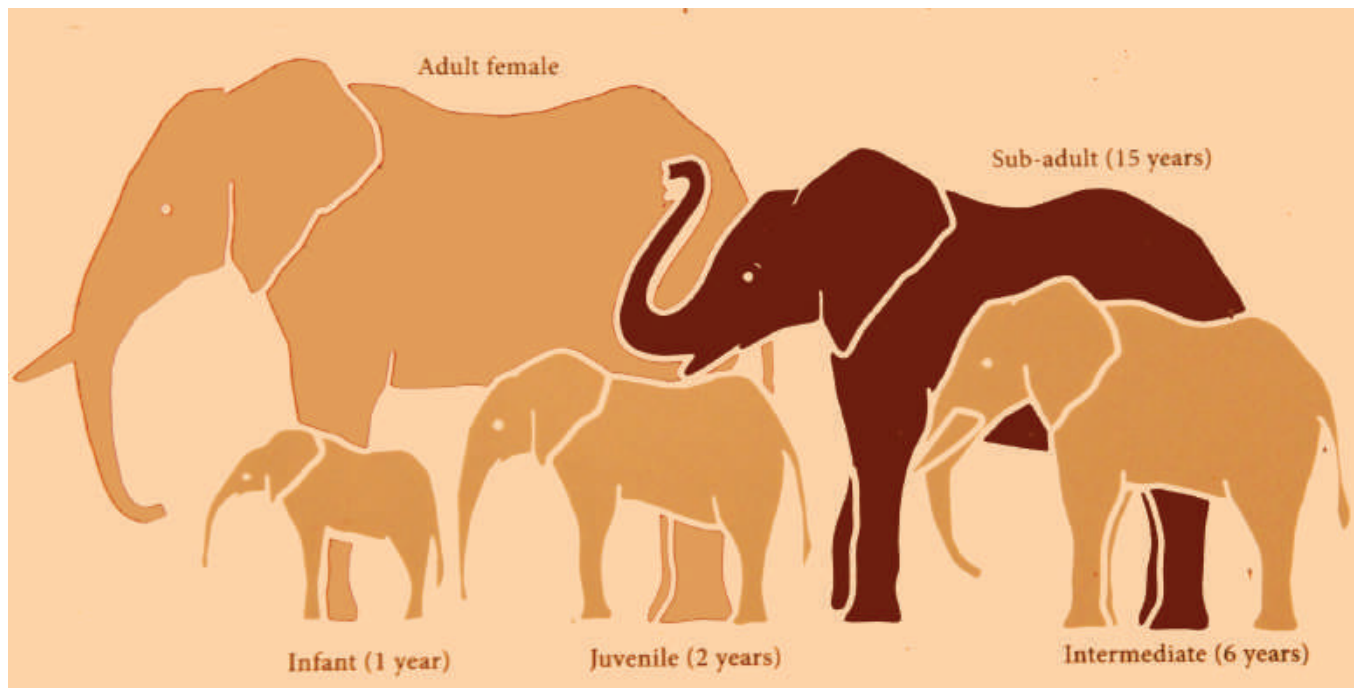
**JUVENILE - 1-2 METRES
(APPLIES TO A SAVANNAH ELEPHANT)**



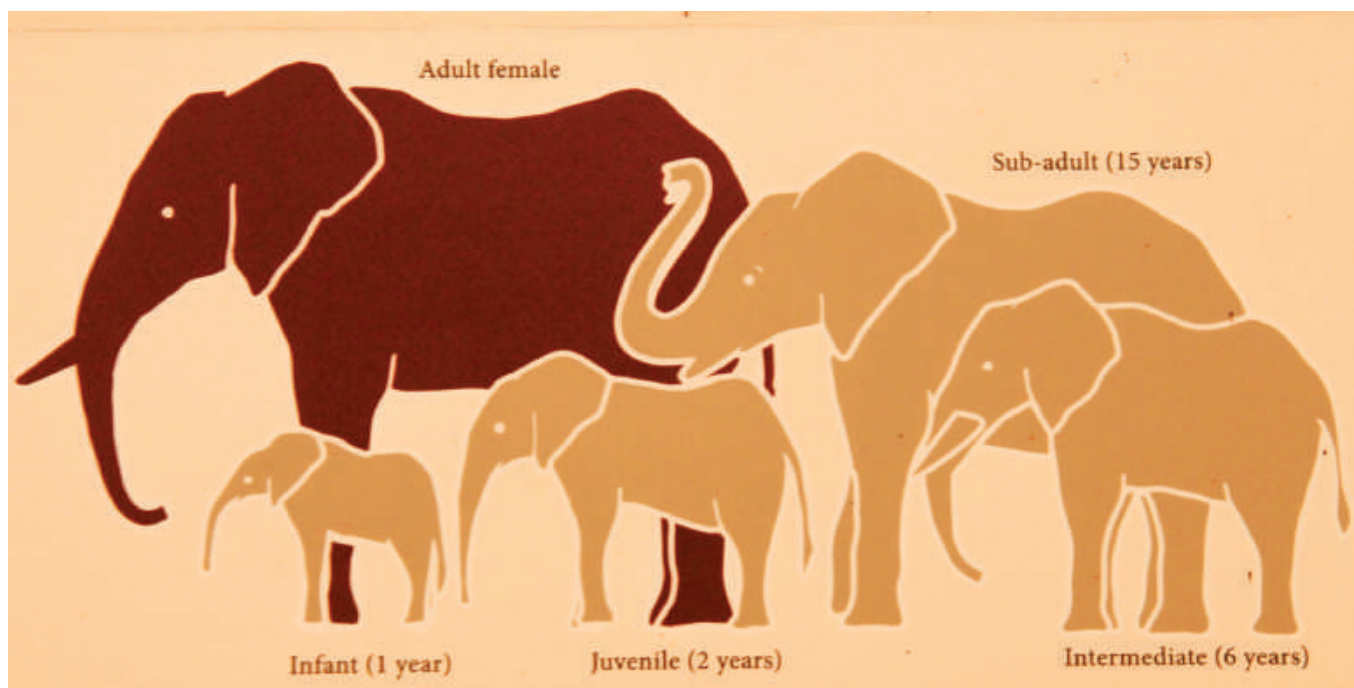
USING THE HEIGHT OF AN ELEPHANT TO DETERMINE THE APPROXIMATE AGE OF A DEAD ELEPHANT

AGE CLASS

SUB-ADULT - 2-2.5 METRES
(APPLIES TO A SAVANNAH ELEPHANT)



ADULT - >2.5 METRES
(APPLIES TO A SAVANNAH ELEPHANT)



USING THE LOWER JAW (MANDIBLE) TO DETERMINE THE AGE OF A DEAD ELEPHANT

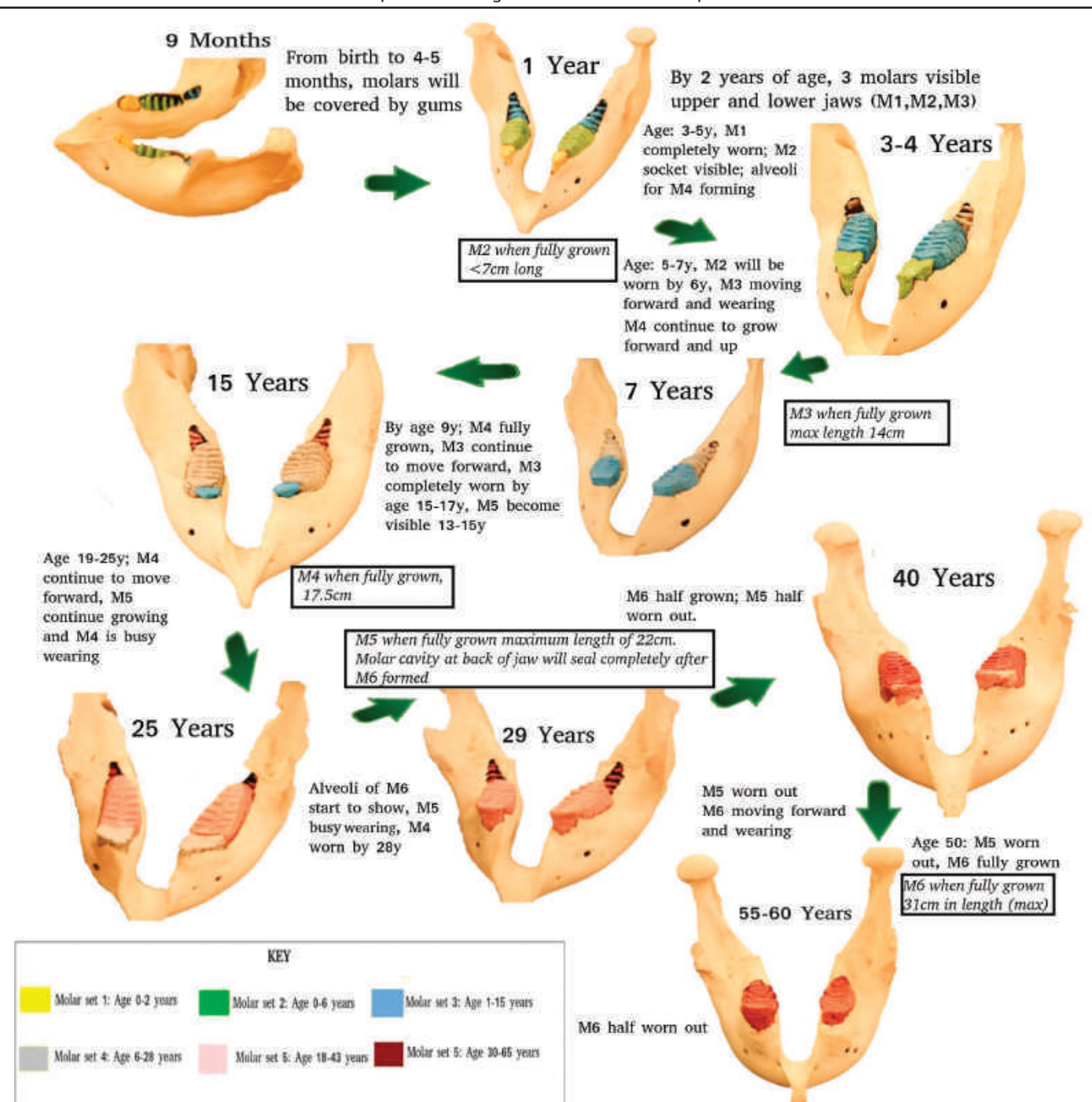
The most reliable way to age a dead elephant is by looking at the development of the molars. Elephants have 6 sets of molars throughout their life and the development of these are very specific to age.

The following can be used to determine the molar set and age of elephant:

1. The length of the molar
2. The width of the molar
3. The number of lamellae per molar

For our purpose the length of the molars will be used. This will be sufficient and reliable in order to categorize the dead elephant into one of the three age categories.

Below is a demonstration of molar development throughout the life of an elephant:



Summary Of Molar Development Throughout The Life Of An Elephant (developed By Laws (1966) And Modified By Jachmann (1985), Compiled By Nelie De Kock (2019)

FIELD TECHNIQUES FOR MEASURING MOLARS

Molars when fully grown (as a rule of thumb) can be summarized as:

MOLAR (CM)	LENGTH (CM)	AGE CATEGORY (USING 3 CATEGORIES)
M2	Less than 7cm	Juvenile
M3	Maximum 14cm	Juvenile
M4	17.5cm	Sub-adult
M5	Maximum 22cm	Adult
M6	Maximum 31cm	Adult

EXAMPLES OF FIELD TECHNIQUES FOR MEASURING MOLARS AND LOWER JAWS:



My index finger is 12 centimetres long and my thumb is 5 centimetres long. In the picture (left), two molars are present. Start by measuring from the front of the jaw. The first molar is just under 17 centimetres in length, but are already wearing, this is the elephants' 4th molar with the 5th molar forming in the back of the jaw. From this we can deduce that the age category of the elephant is between 15-18 years placing him into the Sub-adult age category.

In the next example (right): Here two molars are present. The first molar is more than halfway worn and the second molar is almost halfway formed. The first molar is Molar 5 and the second molar is Molar 6 which will place this elephant into the Adult age category.



MONITORING THE
ILLEGAL KILLING
OF ELEPHANTS

