

Sustainably Managing Buffalo Trophy Quality



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The sustainable utilization of Africa's wildlife is a vital component of its conservation.

In countries where hunting is legal – wildlife populations are booming.

Where hunting has been banned, wildlife populations have crashed.

Well managed hunting programs are therefore good for the conservation of wildlife populations in general, but they must be :-

Ecologically

Economically

AND Genetically sustainable.

An impressive buffalo indeed, but how old is he and where does he fit into the grand scheme of things?



Important Buffalo Considerations

- **Sexual maturity is a function of body weight NOT age.**
- **When a buffalo gets to 2/3's (about 70 %) of its genetically determined body weight it will become sexually mature.**
- **Regarding bulls, sexual maturity must not be confused with breeding bull status. This is determined by strength and boss development. Wild, free ranging buffalo must fight for social dominance and breeding favors.**
- **Nutrition (primarily seasonal rainfall) determines growth rate and consequently the age of sexual maturity.**
- **Sexual maturity produces testosterone and this induces secondary sexual characteristics.**

A buffalo's boss is a secondary sexual characteristic.

A buffalo's appearance is therefore determined by its genotype, phenotype AND its hormonal status. (Jan Bonsma)

South of the Zambezi River, Southern buffalo bulls are sexually mature at +/- 5 yrs but they are only big, heavy and strong enough, with a boss hard enough for fighting by sometime in their 8 th year.

They remain breeding bulls for only about three years and are usually displaced sometime in their eleventh year.

Being a herd/breeding bull is hard work – always grazing at the back of the herd, constantly on guard for lions and challengers ultimately results in a loss of body condition.

When too much condition is lost, bulls lose their dominant hierarchy position within the herd.

To regain strength and condition such bulls leave the herd and join a bachelor group for a while.

For this reason, bachelor herds can contain 6 & 7 year old pre-breeding bulls, bulls of breeding age AND post breeding age Dagga Boys.

The buffalo gestation period is 11 months.

Wild, free-ranging cows south of the Zambezi are sexually mature at 4 yrs and calve for the first time in their 5 th yr.

Inter-calving period is 18 to 24 months.

The effect of testosterone.

No testicles = no boss development

The “Ox of the Okavango”



Initially this buffalo was thought to be a hormonally disturbed cow.



Thin slender, almost feminine neck.





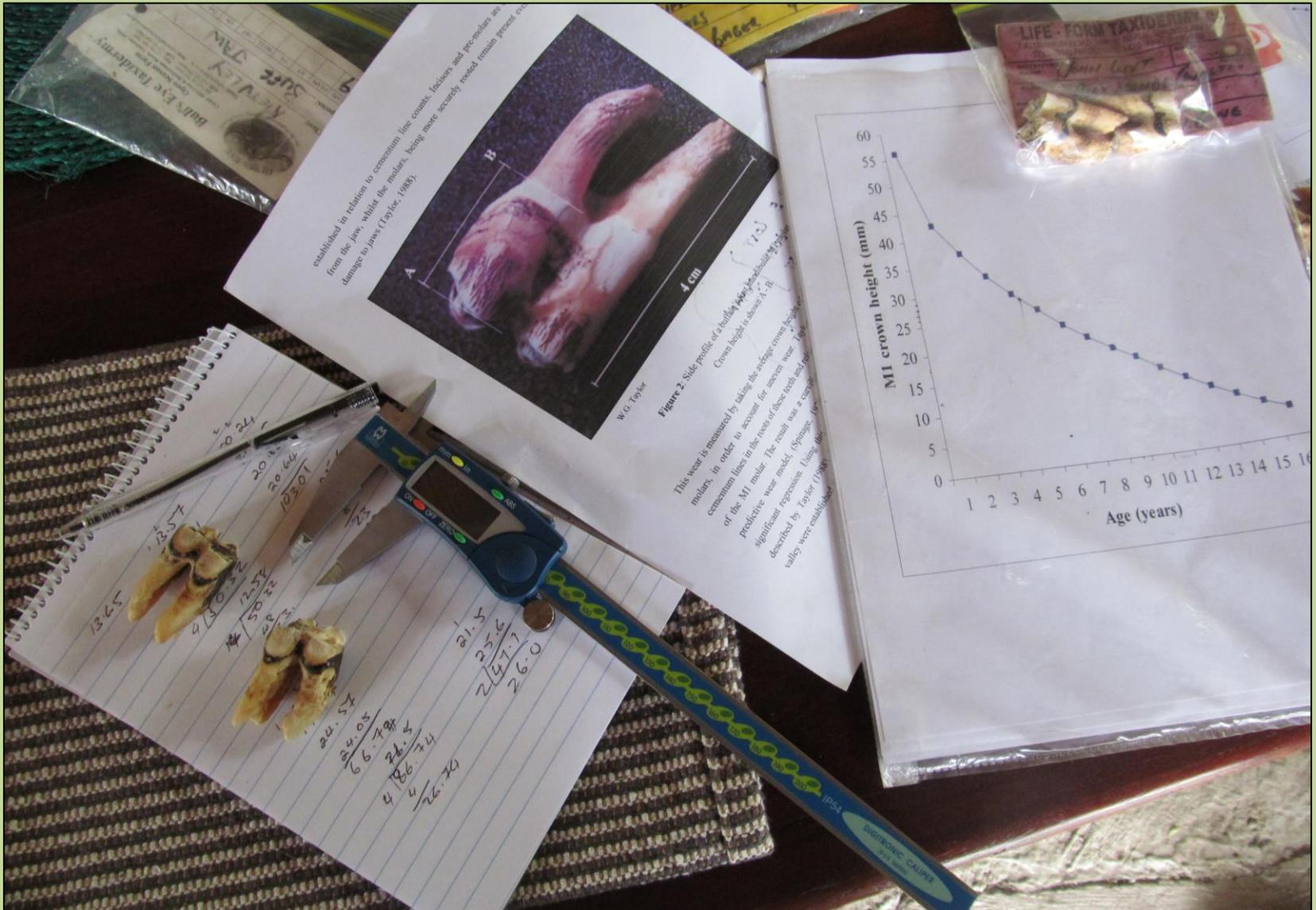


No testicles

Penis sheath

TAYLOR 1 ST MOLAR TOOTH BUFFALO AGING METHOD

enables us to age bull buffalo accurately.



7.5 Years old

Late 13 Years old



23, 35 mm



8, 9 mm

Average crown heights in mm – each tooth gets measured in 4 places

Average crown height in mm is plotted to give age in years.



Average crown height in mm is plotted to give age in years.



7.5 yrs old – pre breeding-age bull



Late 13 year old post breeding age “Dagga Boy”



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The Taylor aging process appears accurate, repeatable and reliable.



10,27 mm

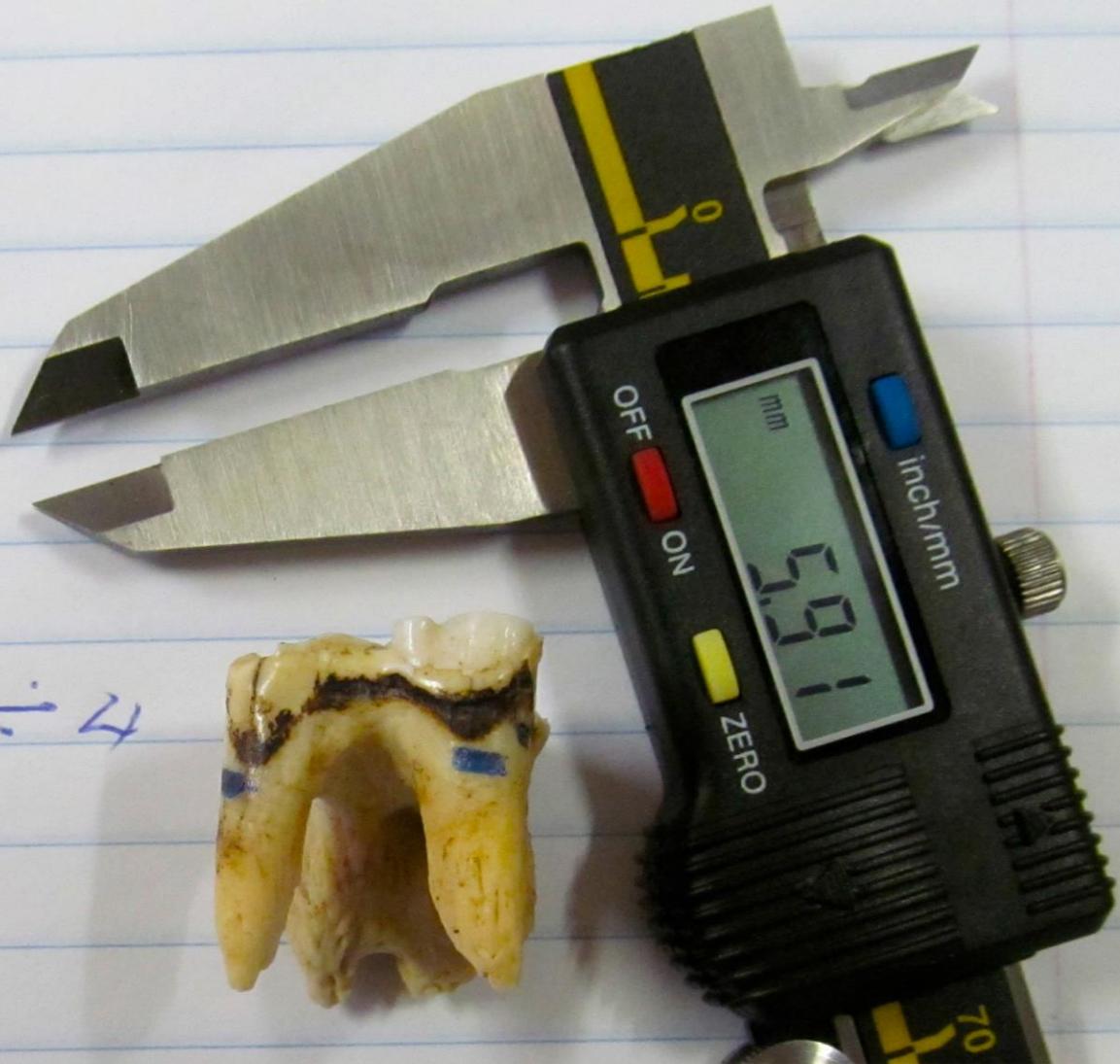
9,39 mm

9,42 mm

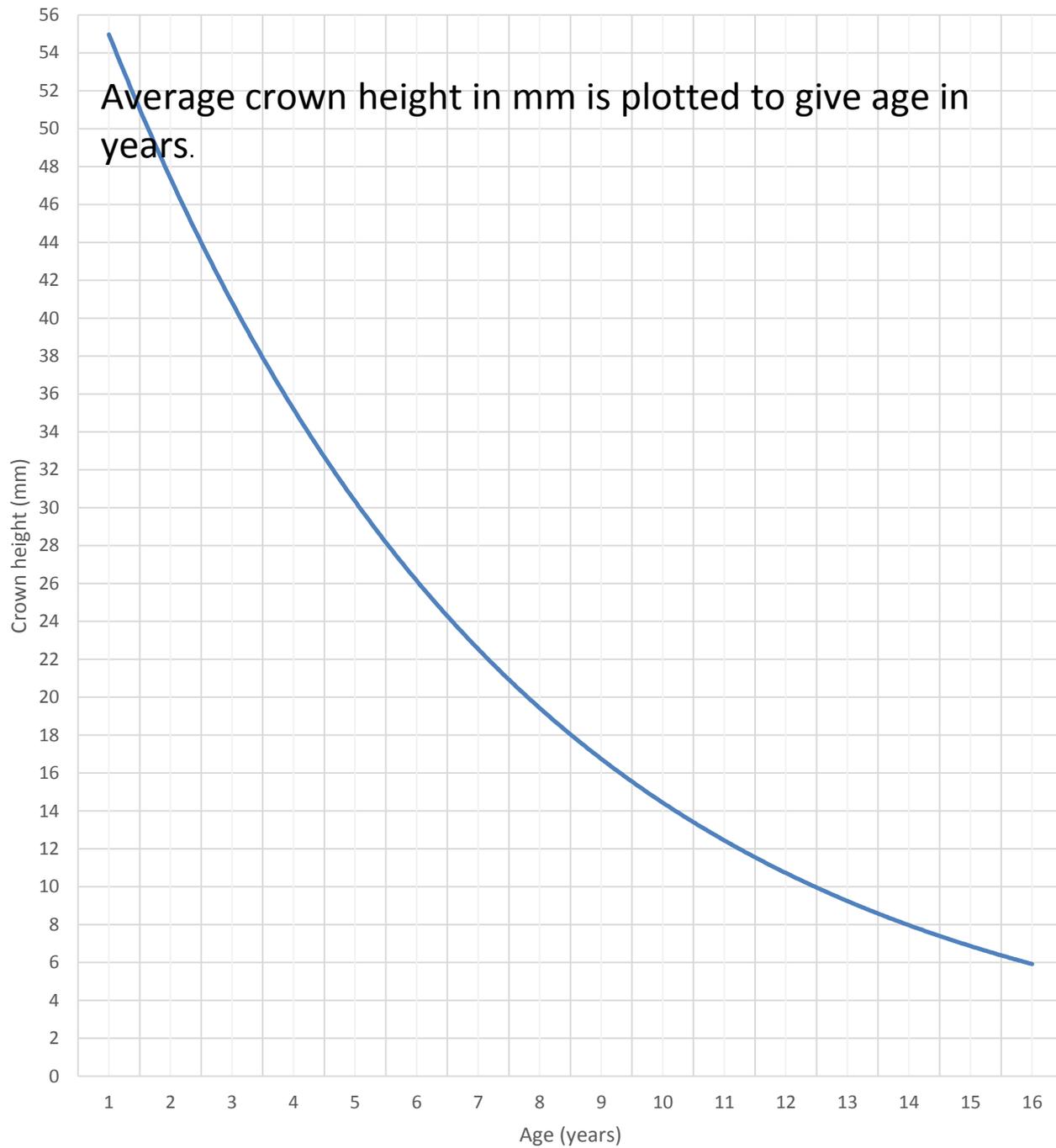
5,91 mm

34,99 mm \div 4

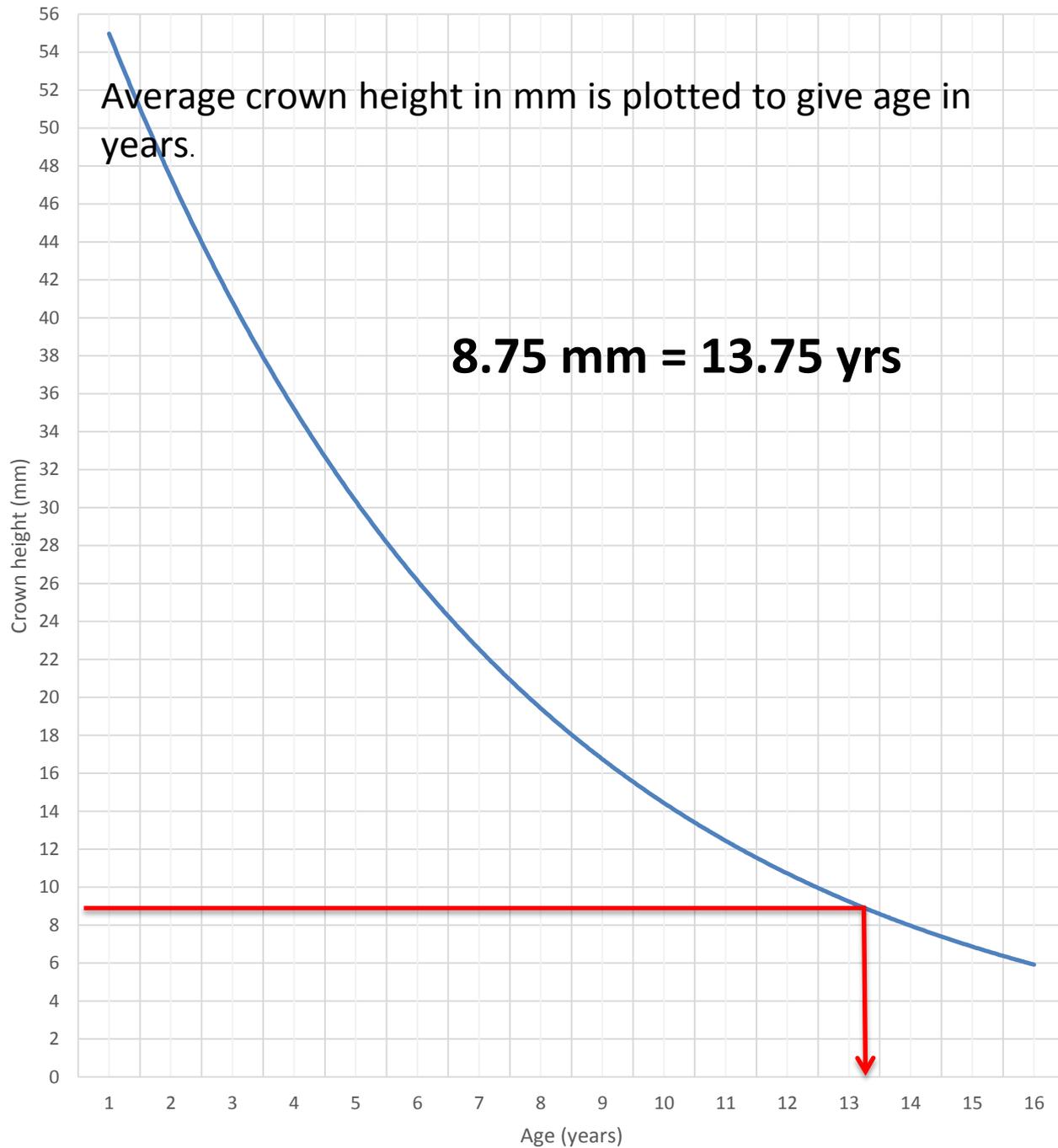
= 8,75 mm



Average crown height in mm is plotted to give age in years.



Average crown height in mm is plotted to give age in years.



Lion-killed KNP buffalo, aged to be early in his 8 th year.



Front teeth of an 8 yr bull buffalo. Still sharp and in good condition.





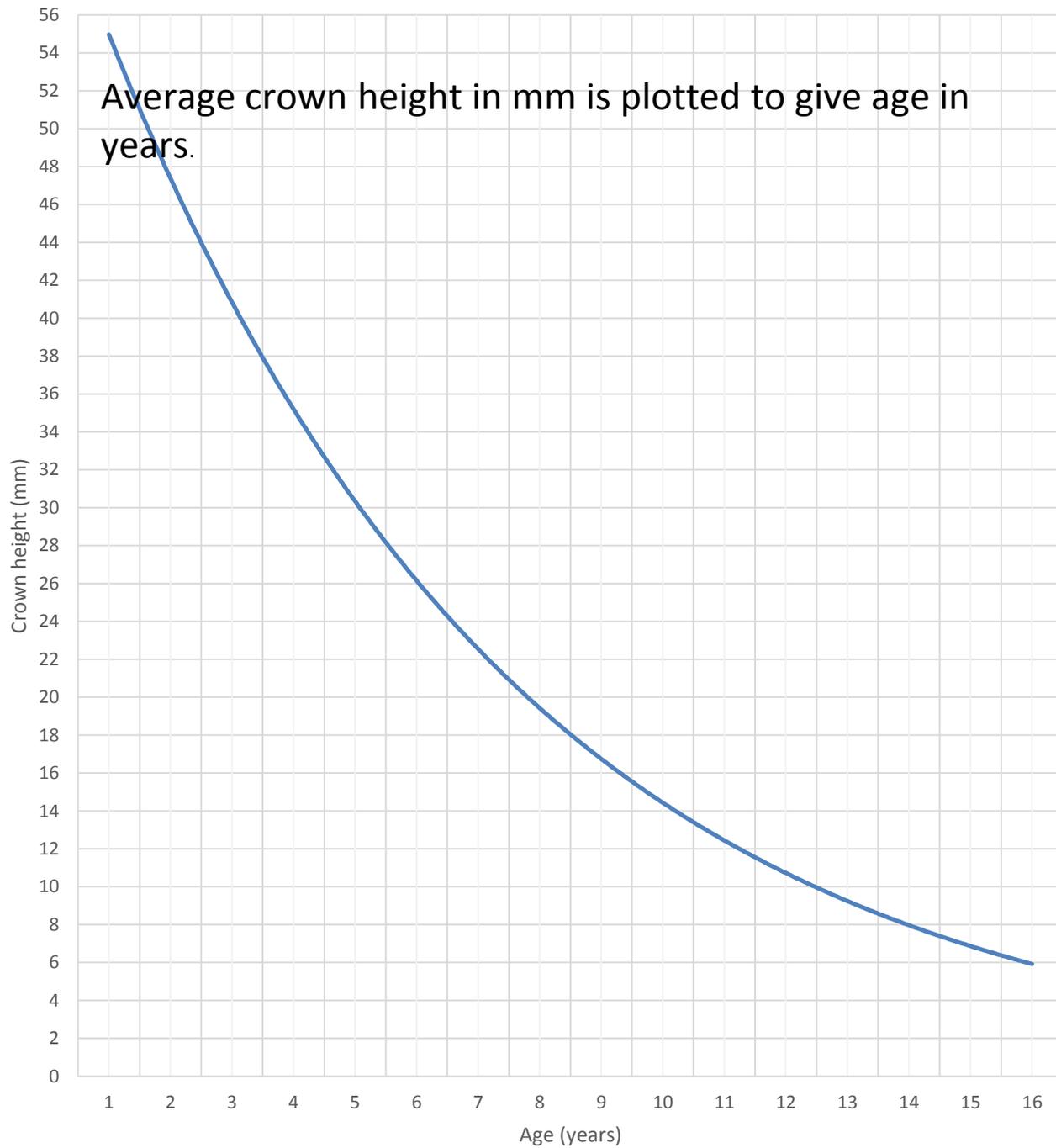
$$\begin{array}{r} 12,97 \\ 28,60 \\ 27,69 \\ \hline 81,27 \end{array}$$

$$\begin{array}{r} 13,15 \\ 23,27 \\ 26,18 \\ \hline 77,01 \end{array}$$

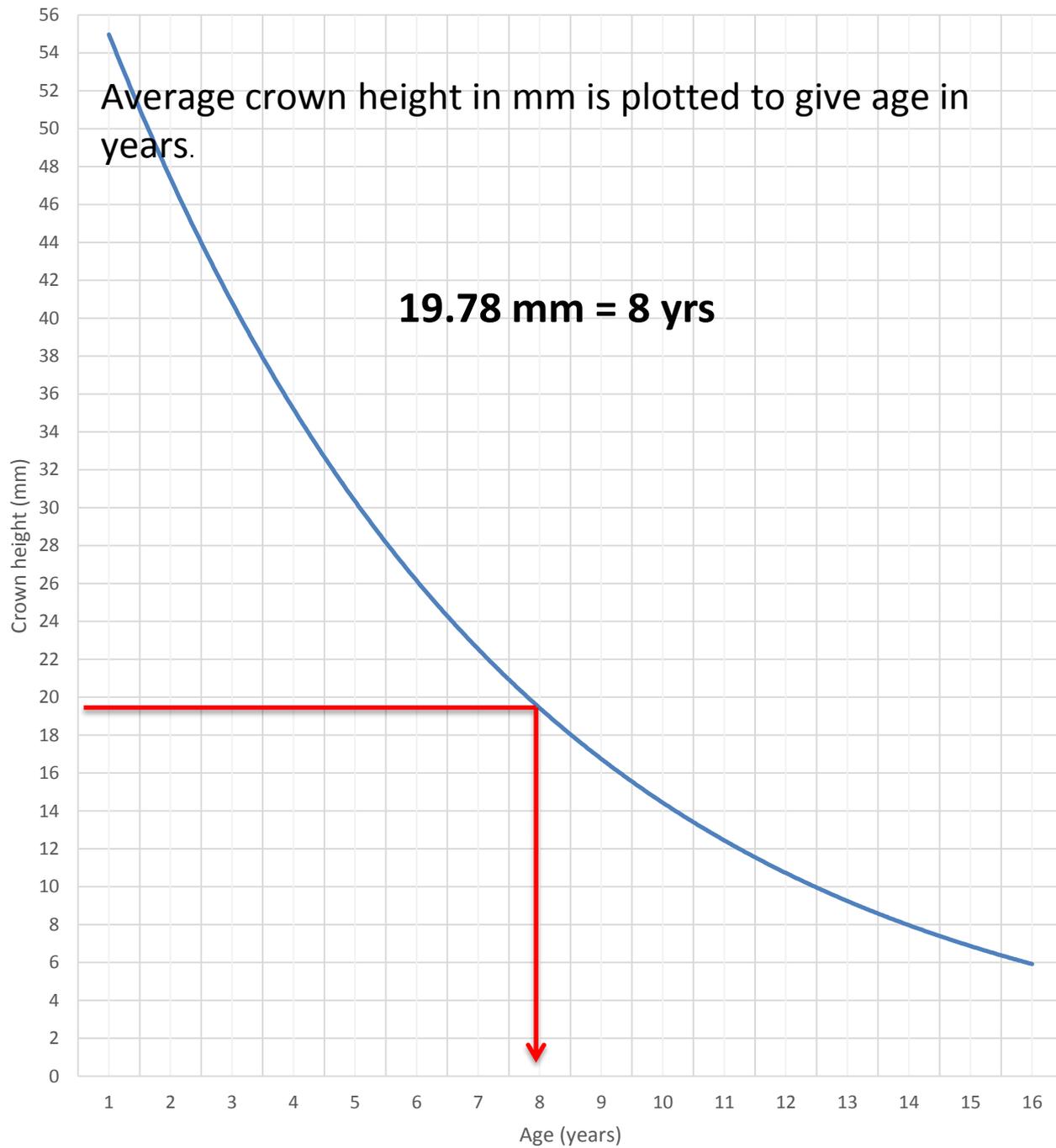
$$\text{Total } 158,28 \div 8$$

$$= 19,78 \text{ mm}$$

Average crown height in mm is plotted to give age in years.



Average crown height in mm is plotted to give age in years.



Lion-killed Kruger National Park buffalo

8.5 years old



Lion-Killed Kruger National Park Buffalo

8 years old



Lioned-Killed Kruger National Park Buffalo

Also in his 8 th year



Lion-Killed Kruger National Park buffalo – also aged to be 8 yrs old



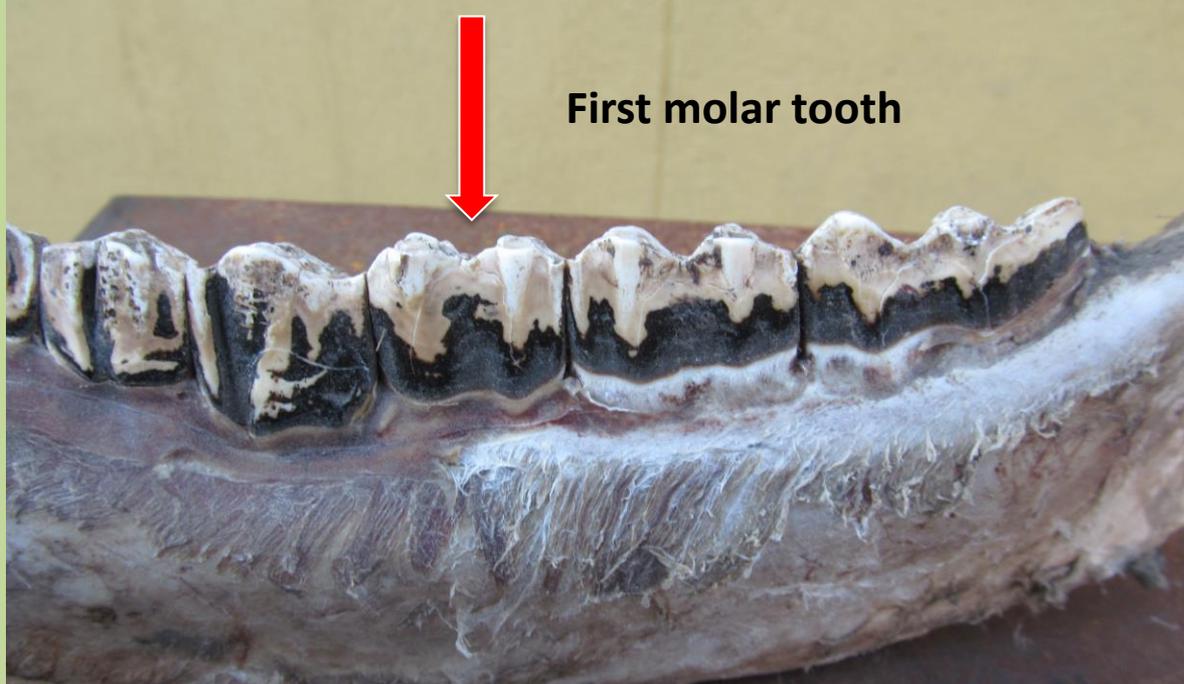
8 yr old lion-killed Kruger National Park buffalo



Why are KNP lions killing so many 8 yr old bulls?

Front teeth of 8 yr old lion-killed Kruger National Park buffalo





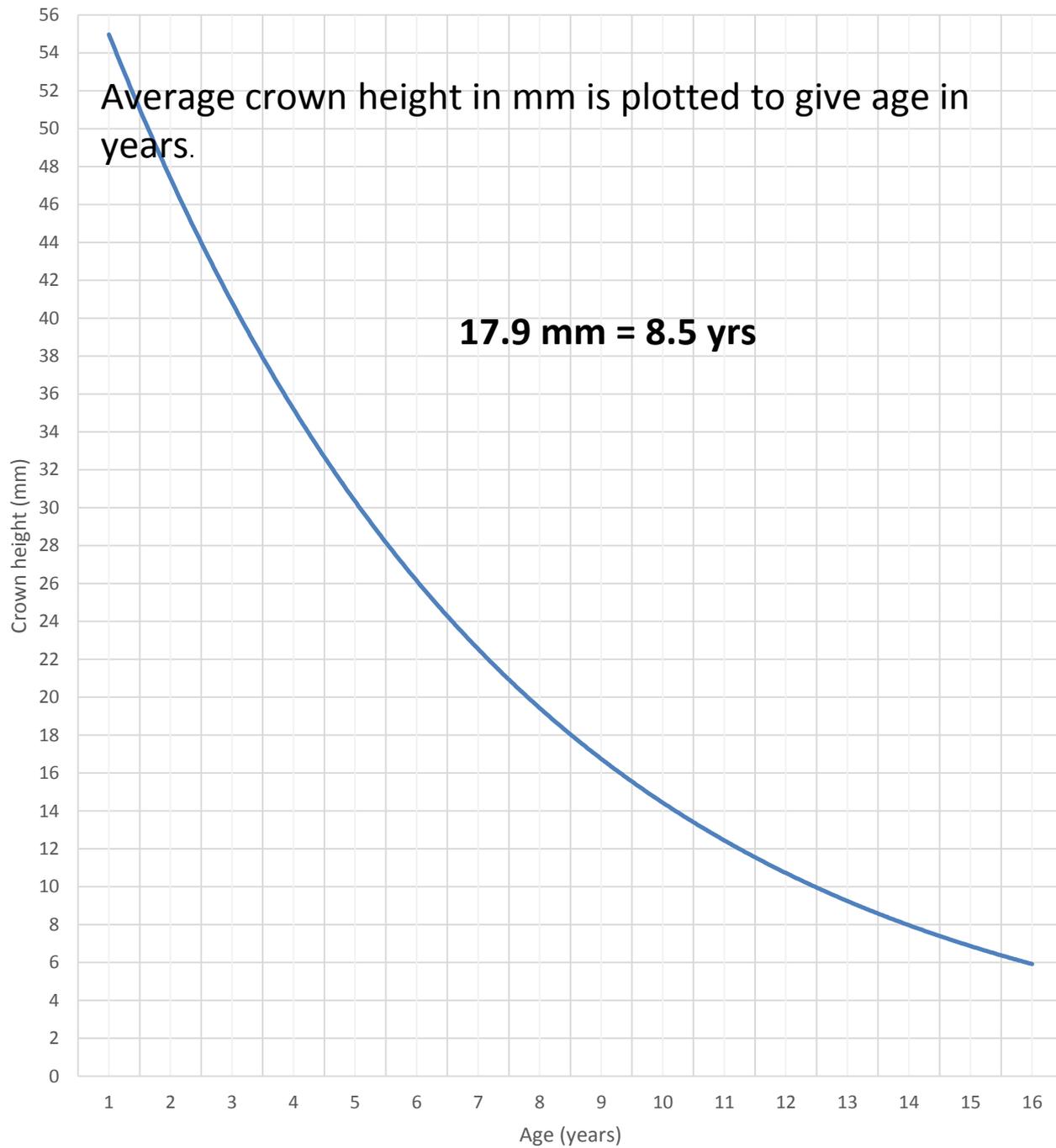
First molar tooth

Average crown height

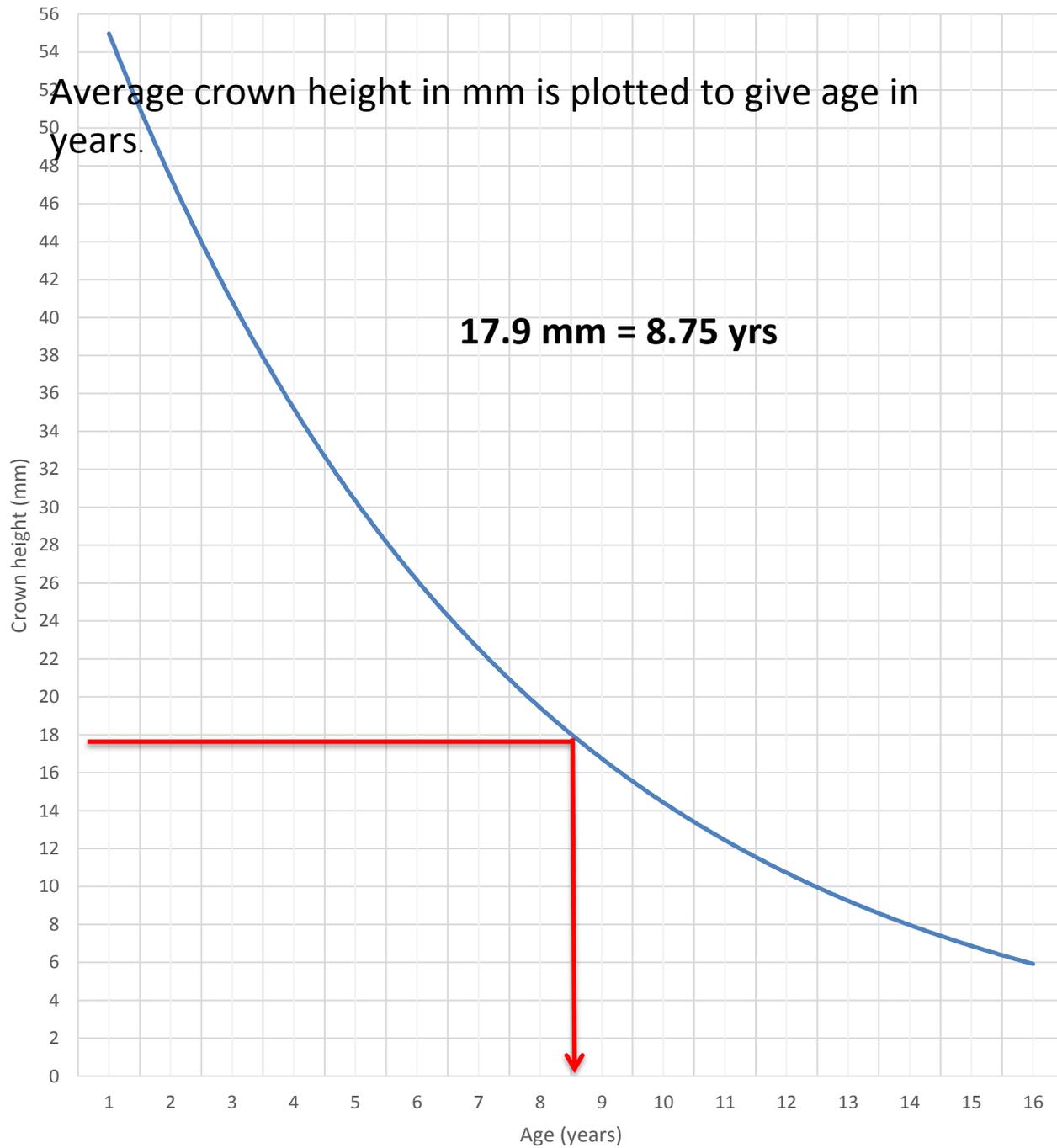
17,9 mm



Average crown height in mm is plotted to give age in years.



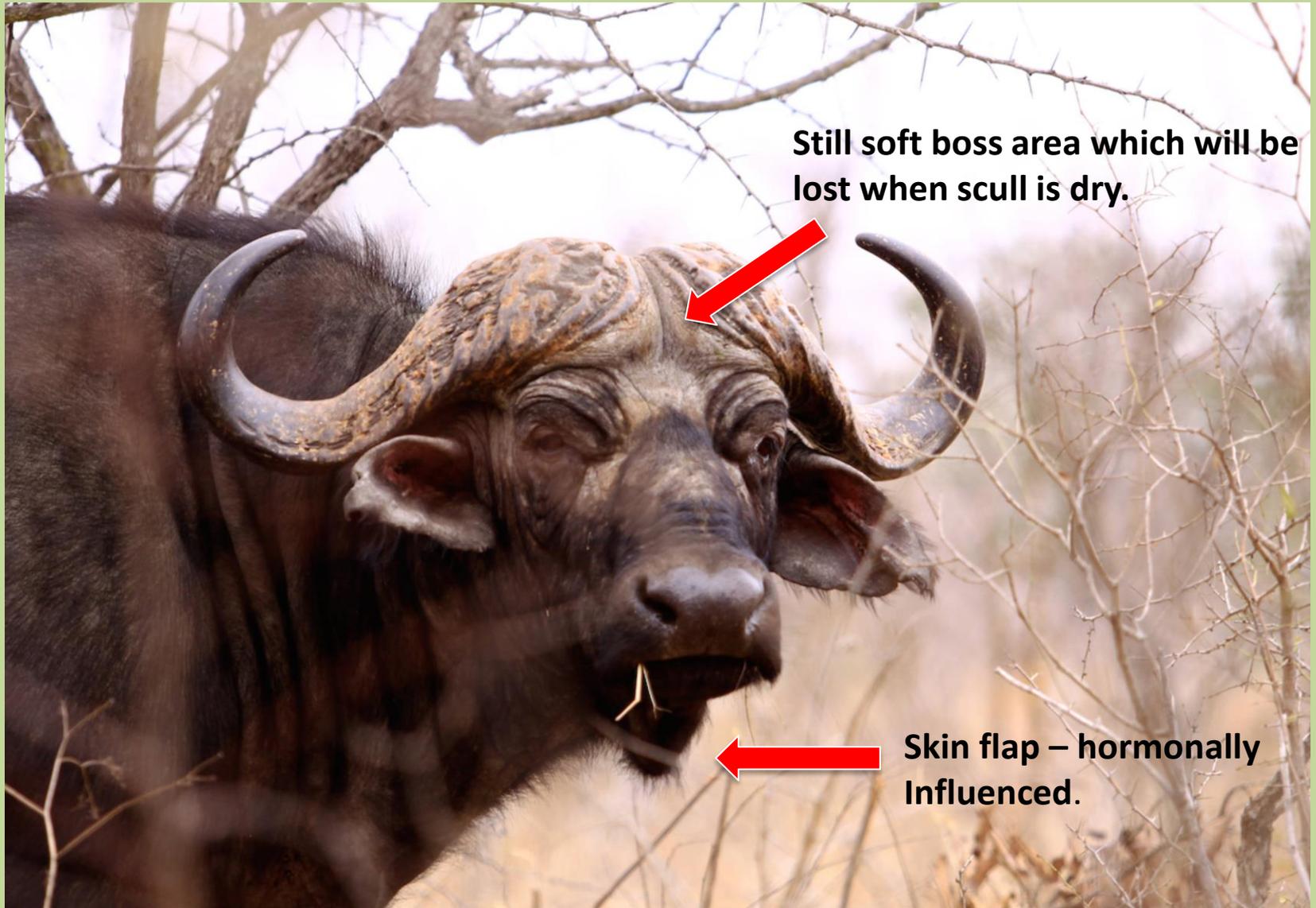
Average crown height in mm is plotted to give age in years.



Buffalo bull estimated to be 8.5 years old



Buffalo bull estimated to be 8.5 years old



Late 8 yr old bull – ‘doing his stuff’!!! This age group are often dominant herd bulls, active breeder and sometimes killed by lions while ‘defending the herd’.



**Dominant herd bull – estimated to be early in his 9 th year.
Photo taken in April 2015. With a 11 month gestation period, the
breeding season closely follows the calving season.**



Same bull showing lots of interest in an in estrus cow



**9 year old dominant herd bull shown lots of secondary sexual characteristics.
We now know that this age class of bulls are active breeders**



A dominant breeding bull in his 8 th year tests the urine of a cow for breeding receptiveness. Notice his nice and sharp incisors.



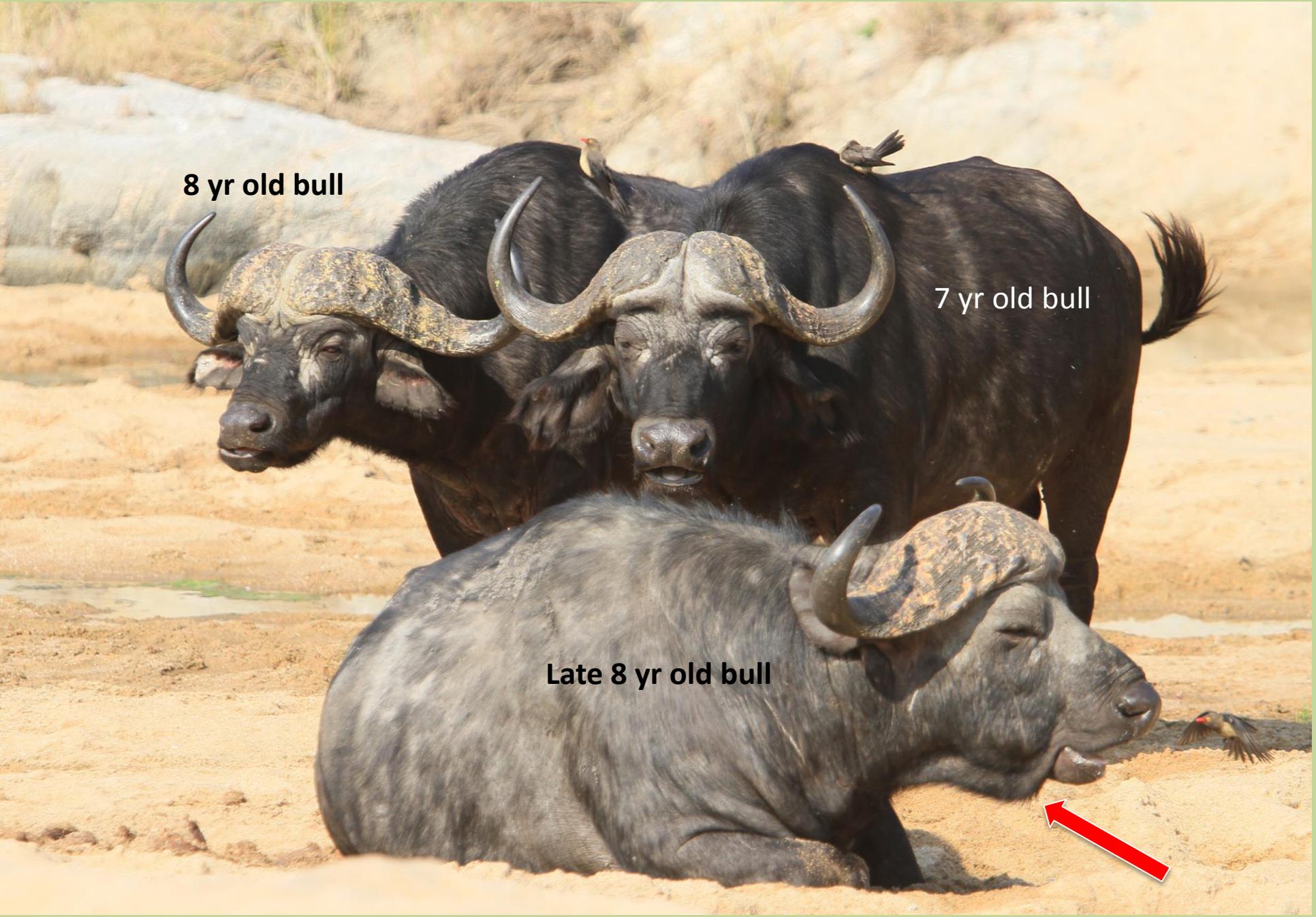
Bachelor buffalo herds can have bulls of all ages – from 6 to 12 years.



8 yr old bull

7 yr old bull

Late 8 yr old bull

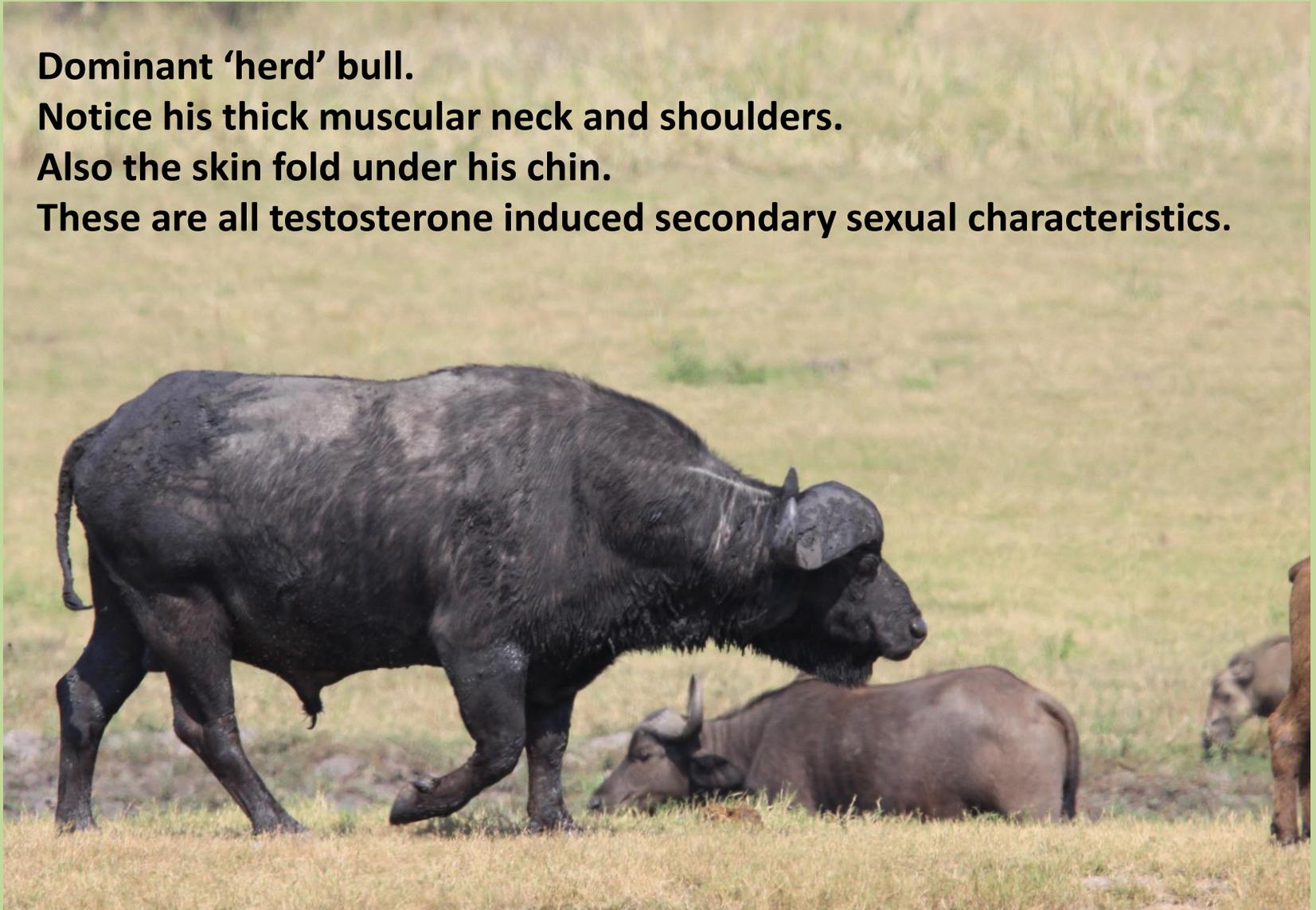


Dominant 'herd' bull.

Notice his thick muscular neck and shoulders.

Also the skin fold under his chin.

These are all testosterone induced secondary sexual characteristics.



**The same dominant herd bull.
This bull is in his 9 th year.**



Buffalo Age Classes

Late 4 going on 5 years old – soft boss, sharp horn tips.



Late 5 going on 6 yr old bull



Same bull, no secondary sexual characteristics
This is a pre-breeding age bull.



An impressive 6 year old pre-breeding buffalo bull. Such bulls are few and far between and should be afforded every opportunity to lead fully productive 'breeding' lives before being sport hunted.



6 year old captive-bred old bull!!!

Lived his whole life on a diet of lucerne. A good example of how nutrition affects growth rate, the age of sexual maturity and consequently boss development.



Immature bull, early 7 yrs – boss still soft - 50" spread.



Early 7 yr old bull – boss still soft and ‘puffy’ in the middle



Early 7 yr old bull – boss still soft and ‘puffy’ in the middle



**Late 7 years old – sharp horn tips pointing rearwards
Boss soft and ‘puffy’ in the middle.**



Late 8 year old bull showing secondary sexual characteristics



Prime breeding bull photographed in May – early 9 years old



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**9 yr old solid-bossed 40" bull
In all likelihood a prime breeding bull.
Bulls this age should NOT be hunted.**



10 yr old breeding age bull in a bachelor herd.



11 yr old herd bull



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12 yr old Dagga Boy – a ‘real’ trophy



Late 12 / early 13 yr old, post breeding age bull.



**13 yr old
“Scrumcap”**



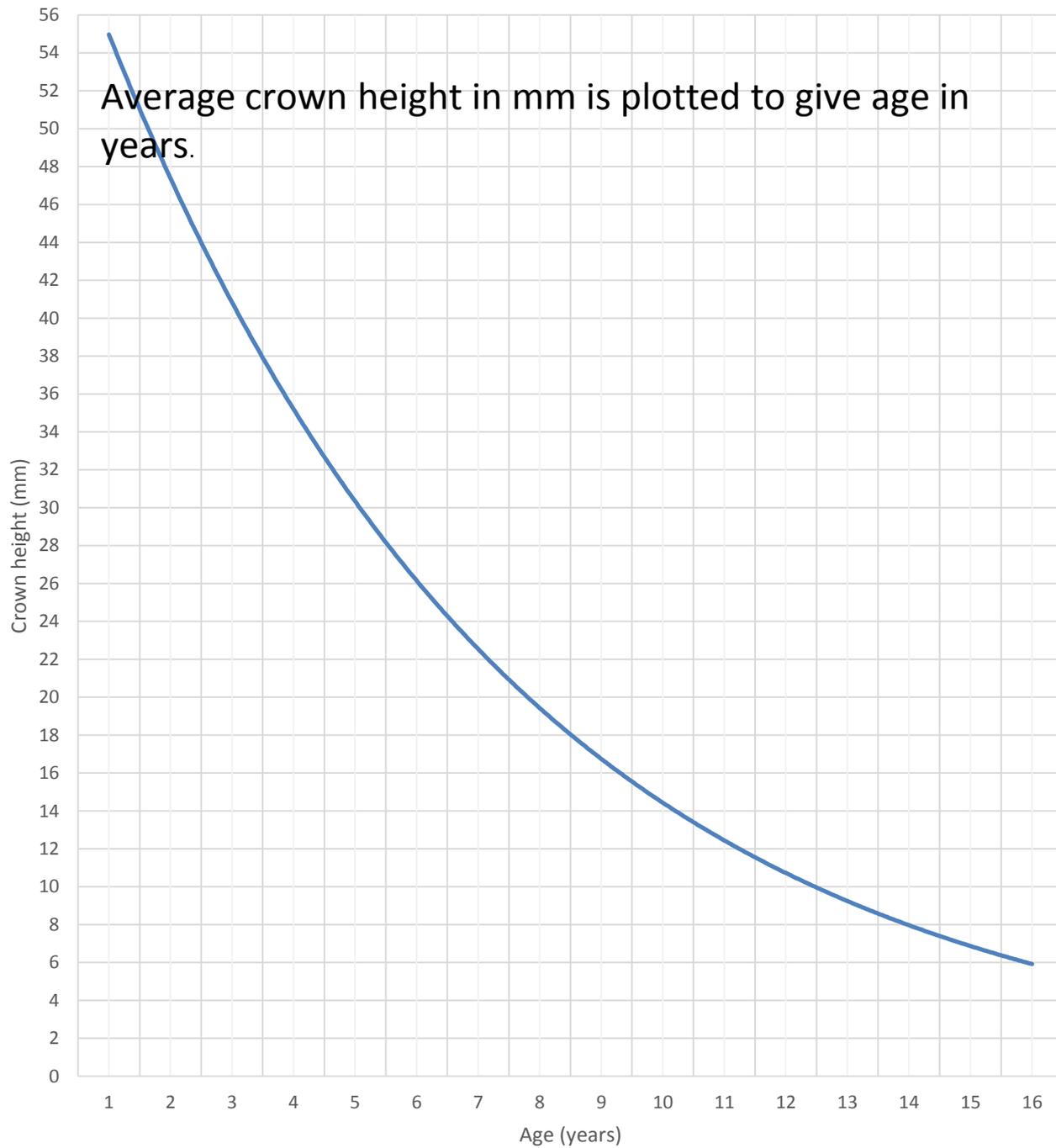
Early 13 old lion-killed bull



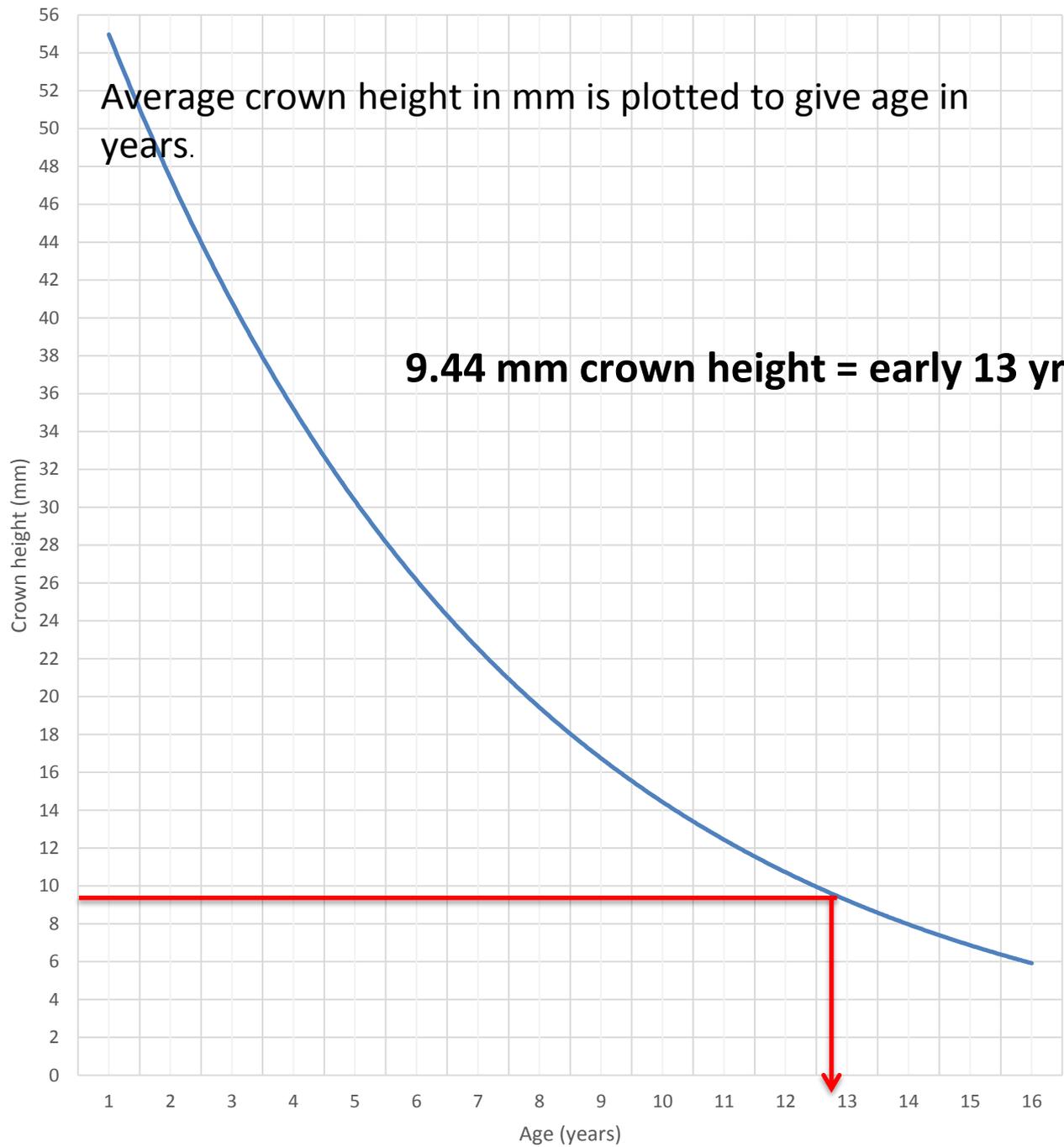
Average crown height = 9.44 mm



Average crown height in mm is plotted to give age in years.



Average crown height in mm is plotted to give age in years.



9.44 mm crown height = early 13 yrs

Front teeth of early 13 yr old bull



14 years



BUFFALO TROPHY ASSESSMENT

Tip to tip ear measurement = 32 to 33 inches



A hands width on either side of the ear tips = 40 inch spread



The spread on some buffalo allows for two hand widths on either side of the ear tips. This puts such bulls into the 48 to 50” bracket.



Trophy Classes

Low 30's: 30 to 33" spread



Trophy Classes

Mid 30's: 34 to 36" spread



Trophy Classes

High 30's: 37 to 39" spread



Trophy Classes

Low 40's: 40 to 42" spread



Trophy Classes

Mid 40's: 43 to 46" spread



Trophy Classes

High 40's: 47 to 49" spread



Trophy Classes

50's: 50 to 52" spread



Current SCI no 1 ranking bull – estimated to be in his 6 th yr



Current SCI no. 2 bull – estimated to be in his 9 th year



Current SCI no. 3 buffalo. Age estimation late 7 yrs old



Jack Brumbelow with Cape or Southern Buffalo that ranks number three

Current SCI no. 5 bull. Estimated to be early in his 7 th year



Robert E. Mann Sr. with Cape or Southern Buffalo that ranks number five

**Current tied for no. 6 position SCI Southern buffalo.
Estimated to be in his 6 th year.**



Current SCI no. 26 – estimated to be in his 5 th year



**Number 2 Rowland Ward Southern buffalo and no. 1 bull.
Estimated to be in his 9 th year – and killed by lions!**



A photo of what is believed to be the same bull when still alive.





54 inch buffalo cow – highest ranking Zimbabwe buffalo in Rowland Ward. Sapi Safari Area, Zambezi Valley 1973



Same gene pool? Photographed 20 yrs later, 3 km from where record book cow was shot.



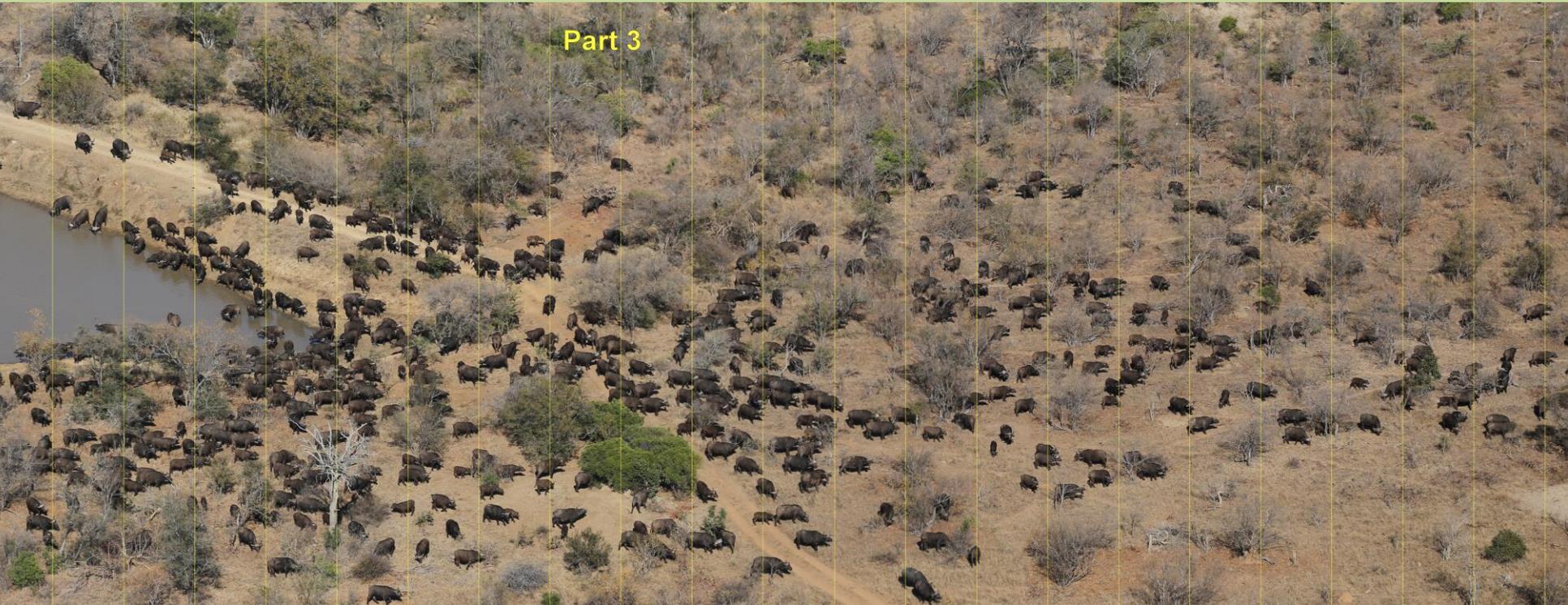


1973



1993

Buffalo Aging & Trophy Assessment Through Aerial Photography.



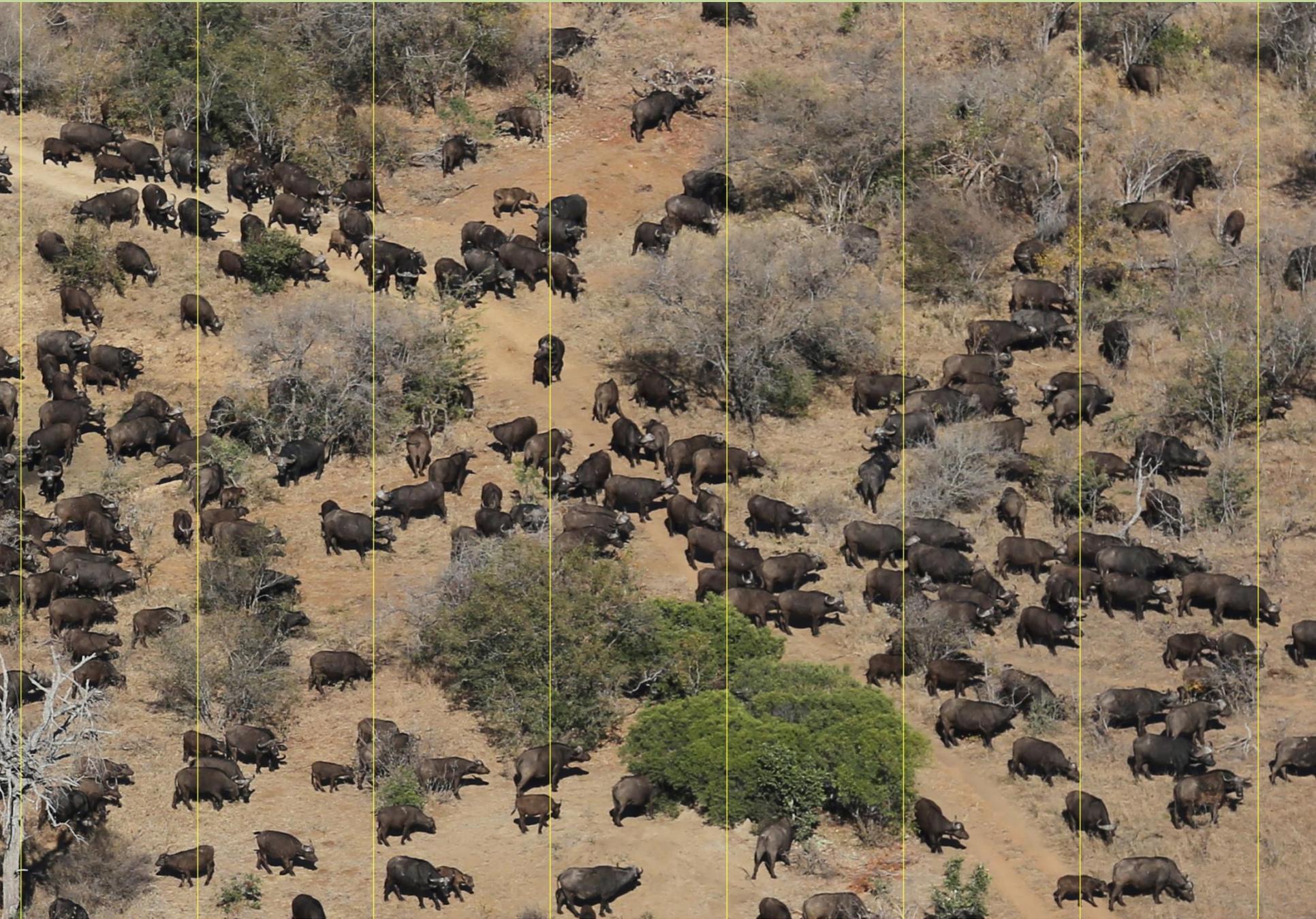
Series of high resolution photos are taken from slow-flying fixed-wing aircraft. The images are then stitched together to produce a large photo of the whole herd. Such is the quality of these photos that it is possible to zoom in so as to be able to age and trophy assess all the sexually mature bulls in the herd.



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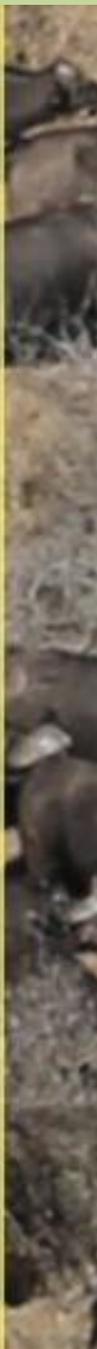
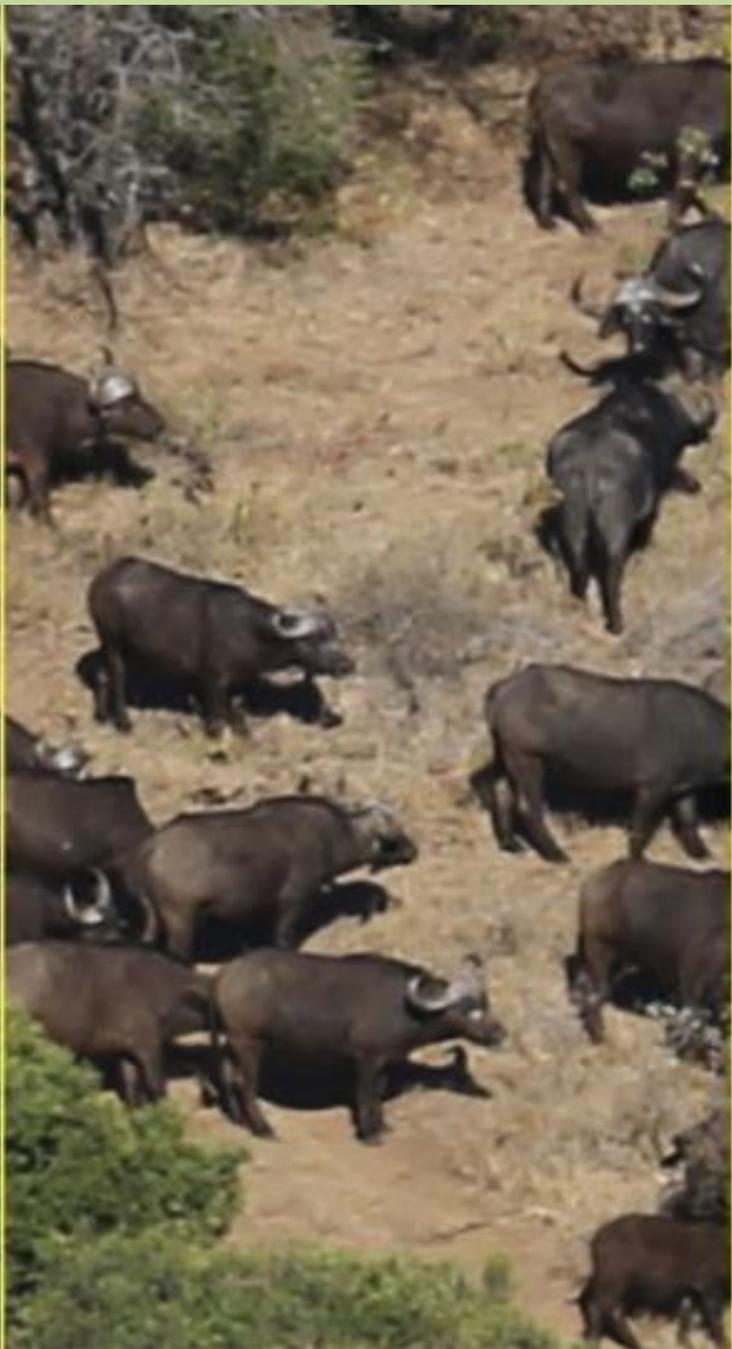
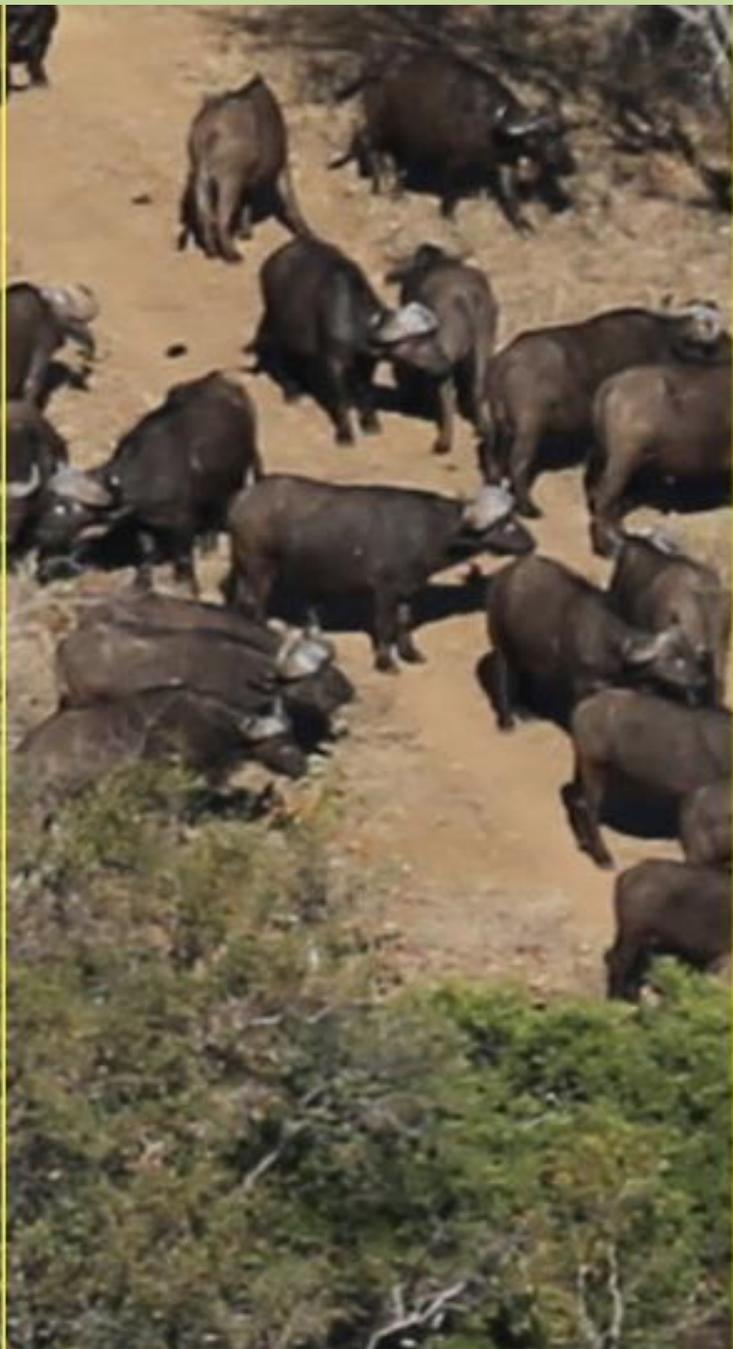
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With an Apple iMac, a 'magic mouse' and the thin vertical yellow lines the whole image can be systematically searched, all the sexually mature bulls can be ID'd, aged and trophy assessed.

Age & Trophy Assessment Of Breeding Herd Bulls 2015

Age	Low 30's 30-33"	Mid 30's 34-36"	High 30's 37-39"	Low 40's 40-43"	Mid 40's 44-46"	High 40's 47-49"	Low 50's 50-53"	Total Years	% of Total
4 yrs	2	3						5	19%
5 yrs	3							3	5%
6 yrs	1	4						5	19%
7 yrs	5	9	2	2				18	30%
8 yrs	8	13	4	1				26	43%
9 yrs	1	2						3	5%
10 yrs									
11 yrs									
12 yrs									
13 yrs									
14 yrs									
15 yrs									
total	20	31	6	3				Total 60	
%'age	33%	51%	10%	5%					

total bull I/D = 60 Herd total = 659 % bulls = 9 %

**Interesting Stats:- 84 % of herd bulls in low to mid 30's category
only 5% of bulls are in the Low 40's class**

Such is the quality of the photos that even small bachelor herds bulls can be photographed

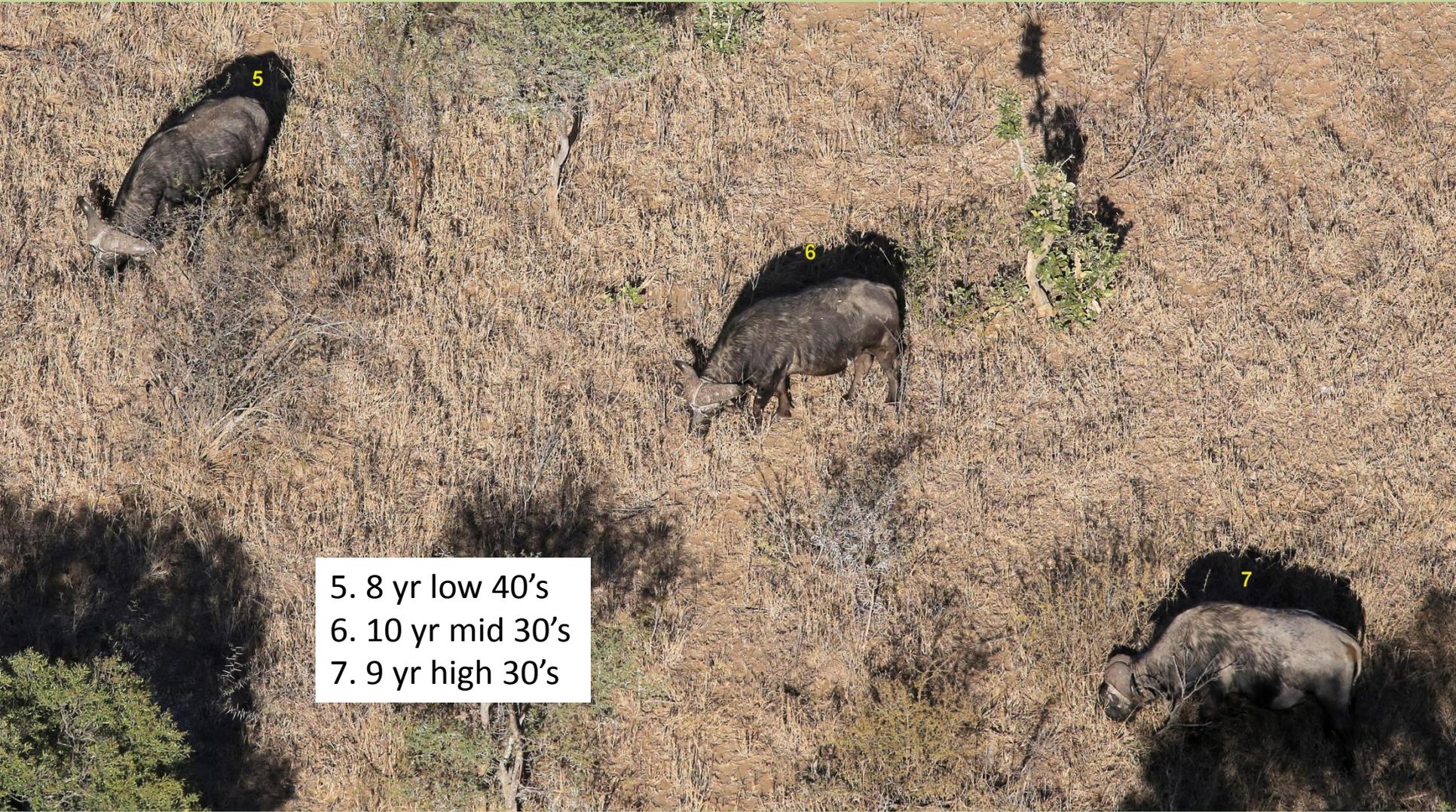




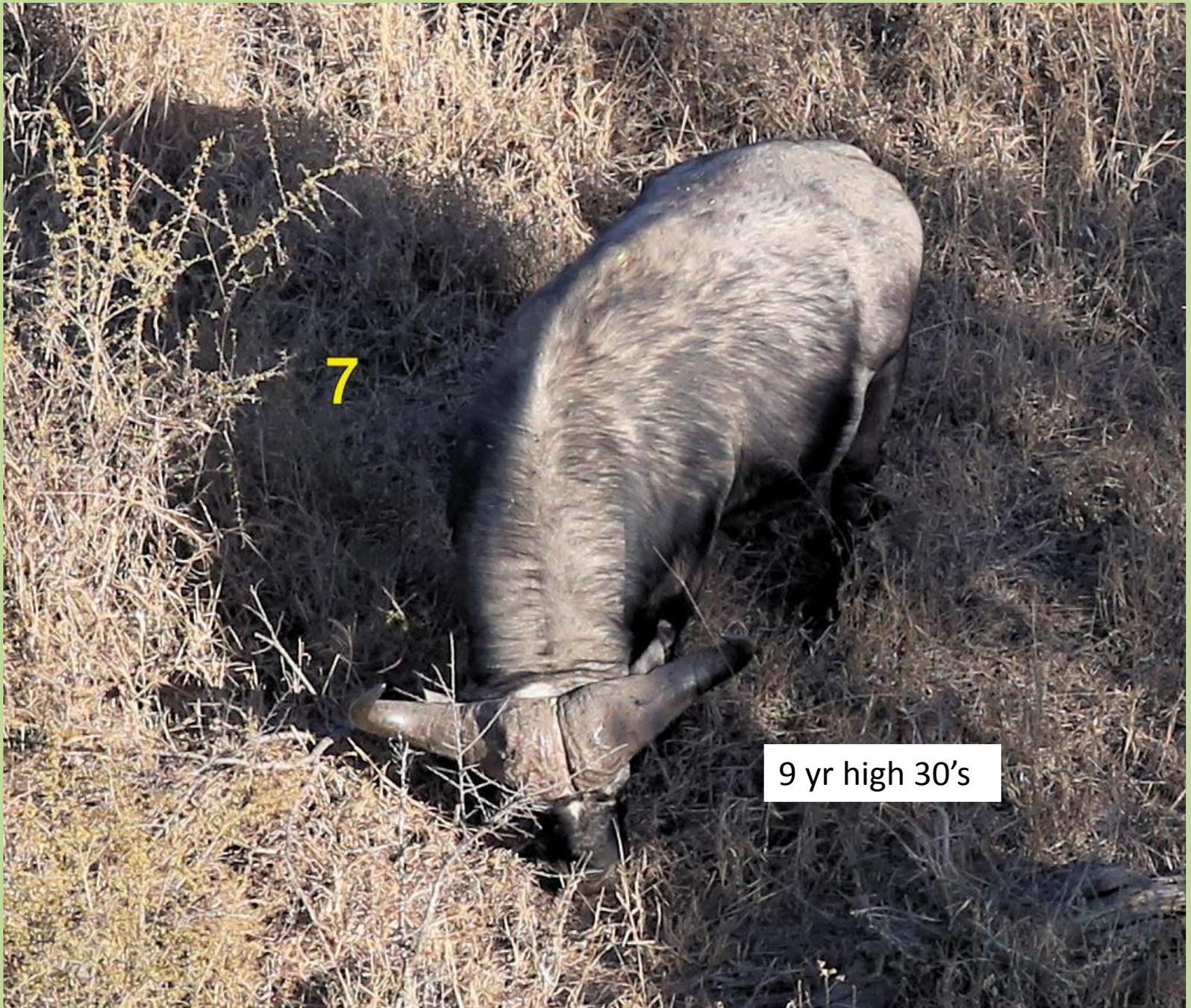
1. 9 mid 30's
2. 13 yr Scrumcap
3. 10 yr mid 30's

1. 8 yr low 30's
2. 7 yr mid 30's
3. 8 yr low 30's
4. 7 yr low 30's
5. 8 yr mid 40's
6. 8 yr low 40's
7. 9 yr mid 30's
8. 9 yr mid 30's





5. 8 yr low 40's
6. 10 yr mid 30's
7. 9 yr high 30's



7

9 yr high 30's

Age & Trophy Assessments Of Bachelor Herds 2015

Age	Low 30's 30-33"	Mid 30's 34-36"	High 30's 37-39"	Low 40's 40-43"	Mid 40's 44-46"	High 40's 47-49"	Low 50's 50-53"	Total Years	% of Total
4 yrs									
5 yrs	1							1	1%
6 yrs									
7 yrs	1	4	1					6	6%
8 yrs	12	24	5	2	3			46	53%
9 yrs	4	9	2					15	17%
10 yrs		7						7	8%
11 yrs		4	2					6	7%
12 yrs	1	1	2	1				5	6%
13 yrs	sc							1	1%
14 yrs									
15 yrs									
total	20	49	12	3	3	Total 87			
%'age	23%	56%	14%	3%	3%				

79 % of bulls in low to mid 30's

Combined herd and bachelor herd bulls stats - 2015

Age	Low 30's 30-33"	Mid 30's 34-36"	High 30's 37-39"	Low 40's 40-43"	Mid 40's 44-46"	High 40's 47-49"	Low 50's 50-53"
4 yrs	2	3					
5 yrs	4						
6 yrs	1	4					
7 yrs	6	13	3	2			
8 yrs	20	37	9	3	3		
9 yrs	5	11	2				
10 yrs		7					
11 yrs	1	4	2				
12 yrs		1	2	1			
13 yrs	1						
14 yrs							
15 yrs							
total	40	80	18	6	3	Total 144 Bulls	
%'age	27%	55%	13%	4%	2%		

Same area, same evaluation criteria taken from 2003 video footage

Age	Mid 30's			Low 40's 40-43"	High 40's		Low 50's		Total Years	% of Total
	Low 30's 30-33"	30's 34-36"	High 30's 37-39"		Mid 40's 44-46"	High 40's 47-49"	Low 50's 50-53"			
4 yrs	2	5	3	1					11	6%
5 yrs	3	7	8	4					22	12%
6 yrs		6	12	7					25	14%
7 yrs	1	10	16	9	1				37	20%
8 yrs		10	11	13	1				35	19%
9 yrs		1	9	14					24	13%
10 yrs		2	7	8	2				19	10%
11 yrs		1	4	2					7	4%
12 yrs		1	1	1					3	2%
13 yrs										
14 yrs										
15 yrs										
total	6	43	71	59	4	183 total				
%age	3%	24%	39%	32%	2%					

27% of bulls 39" or smaller

32% 40 to 43"

Same area, similar evaluation methods – 12 years apart.

YEAR	No. bulls evaluated	% Low 30'S	% Mid 30'S	% High 30'S	% Low 40'S	% High 40
2003	183	3%	24%	39%	32%	2%
2015	144	27%	55%	18%	6%	3%
Difference		+ 24%	+ 31%	- 21%	- 22%	+ 1%

If these figures are not scary then I do not know what is!

Hunting for the 'record books' has over decades a negative effect on overall trophy quality.

The challenge is to now reverse this trend.

From a 'management' perspective, which bull to shoot?





Trophy class bull but at late 8 years he is still of breeding age

Poor trophy quality 32" 9 yr bull. Bulls like this should be hunted as 'management' bulls.



So as to ensure genetic sustainability, bulls of this quality should only be hunted when past breeding age. This bulls is aged to be late 9 /early 10 years old with a 42 inch spread.



Management Suggestions to Maintain Trophy Quality.

It is now possible with aerial photography to accurately determine the trophy potential of an areas mature buffalo bull population.

From this the average trophy size for an area or population can be determined.

To ensure genetic sustainability safari areas should offer two classes of sport-huntable buffalo.

“Classic” & “Management”.

“Classic” are average or better sized specimens – and they should only be hunted when 12 yrs old or older.

“Management” are bulls smaller than the population average.
No age restriction – hunt at any age.

Latest Greater Kruger National Park Buffalo Hunting Protocol For Properties Bordering the KNP

- The following categories of buffalo bulls may be hunted:-

‘Classic buffalo bull’ - Unlimited spread, minimum of 12 years of age.

Management buffalo bull – sub 36” (Rowland Ward) spread, no age restriction, not a scrum cap or broken horn bull

Perfect Example of a 'Management bull'



The perfect 'Classic' buffalo – at least 12 years old, thick, massive and heavy horns and 'bigger than 40 inches" spread.



The challenge when it comes to trophy hunting is to change the client's perception of what constitutes a 'trophy'. Age needs to replace 'inches' as the principle criteria. Can we accomplish this?



Hunters!

Enter the Sports Afield Oldest & Ugliest Buffalo Contest

Support Sustainable Safari Hunting and **WIN a CZ Safari Rifle in .375 with Zeiss Victory Scope, Murray Custom Leather Rifle Case, and Barnes VOR-TX Ammo!**

Any hunter who takes a Cape buffalo in Africa under legal, fair-chase conditions in 2014 is eligible to enter. Hunter who takes the oldest buffalo (as aged by photographs and first molar teeth) wins. Judges decisions are final. See full rules and entry details at www.sportsafield.com/content/buffalo-contest. Good luck!



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MURRAY CUSTOM LEATHER





HUNTERS AFRICA
CHENGETANNI
DOM CARLSON

BK 1

Crown height estimated to be about 7 mm



Average crown height in mm is plotted to give age in years.



Average crown height in mm is plotted to give age in years.



Late 14 years old



Thanks for listening

Dr Kevin Robertson

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