

PREVENTING UNINTENDED SECONDARY LEAD POISONING OF THE SOUTH AFRICAN VULTURE

SUGGESTED MANAGEMENT OF REMAINS OF HARVESTED
GAME ON GAME FARMS AT CULLING OPERATIONS AND AT VULTURE
RESTAURANTS

A NATSHOOT and CHASA conservation project

Prepared by



RATIONALE

Responsible hunters and all accredited hunting associations declared that they are **CONSERVATIONISTS AT HEART** and that their members support and “live” the concept of conservation through sustainable use.

Both Natshoot (NHSA) and CHASA certainly underwrite such declarations.

Take note:

Implement **RESPONSIBLE AND REALISTIC** actions to reduce the severity of the negative effects resulting from the subsistence (consumptive) harvesting of game and the negatives on the **environment** and **conservation** of furred and or feathered game.



THE CHALLENGE



On 6 February 2019 Linda van den Heever, Vulture Project Manager of the Terrestrial Bird Conservation Programme of Birdlife South Africa, informed the Hunters Forum of the negative effect of unintentional secondary lead poisoning of vultures caused by feeding on “left-overs” of harvested furred game shot with lead-based bullets (i.e. hunting ammunition).

As result of this, Natshoot and CHASA offered support for Ms van den Heever’s research on the topic:

1. To determine if fragments of lead-based bullets remain in South African game species after having been harvested with through-and-through shots.
2. To try and find realistic and responsible mitigations to prevent vulture and scavenger access to skulls, carcasses and gut-piles of harvested furred game in which lead fragments are present.
3. To determine the “contribution” subsistence hunting make to the incidence of lead fragments in harvested game, which could result in the unintended secondary lead-poisoning of vultures.



FACTS

Vultures are regarded as one of the most threatened avian functional guilds globally.

Vulture populations have declined in both Asia and Africa in recent decades.

CONTRIBUTING FACTORS

- Habitat loss
- Decreased food availability
- Human disturbance
- Harvesting for belief-based use
- Collisions with, and electrocutions by energy infrastructure
- Poisoning, including unintended secondary lead poisoning has been cited as the single most important cause of vulture mortalities in Africa



ABOUT LEAD POISONING

Vultures are equipped with a digestive system containing acids with a pH as low as 1.0 (humans 5.0).

The digestive acids of vultures are able to dissolve
anthrax
botulism
cholera bacteria and
lead fragments

which as a secondary toxin is then taken up in the blood stream, negatively impacting the bone and feather growth of these birds (also affects their flight stability and leads to their eventual death).



RESEARCH FOCUS

To determine if fragments remain in harvested SA game animals after through-and-through shots:

We focussed our research on the smallest of the more frequently hunted furred game species in South Africa, namely the springbok.

If it was to be shown that there are no lead fragments remaining in springbok skulls, carcasses or in gut-piles after having been shot through-and-through, one will have to extend the research to heavier bodied South African furred game animals.



RESEARCH

Finding lead bullet fragments in harvested springbok skulls, carcasses and gut-piles would be significant as it is perceived that the impact of lead-based projectiles on heavier South African furred game species will probably cause lead bullet fragmentation.

While the common notion among South African subsistence hunters with whom the issue was discussed, was that no lead fragments will remain in light weight furred game species such as springbok.

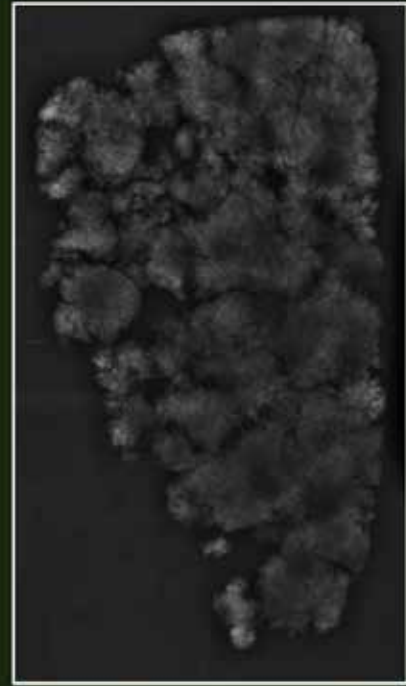
Eventually 36 Springbok were harvested for the research sample.

The hunt to collect the research sample of springbok took place 50 km South-West of Jacobsdal (South of Kimberley) under the well managed auspices of Klipdrift Hunting Safaris between 17 and 21 July 2019.

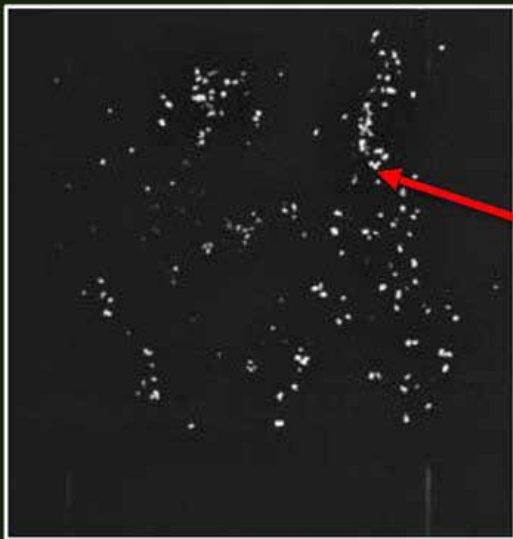


PRE-HUNT X-RAYS

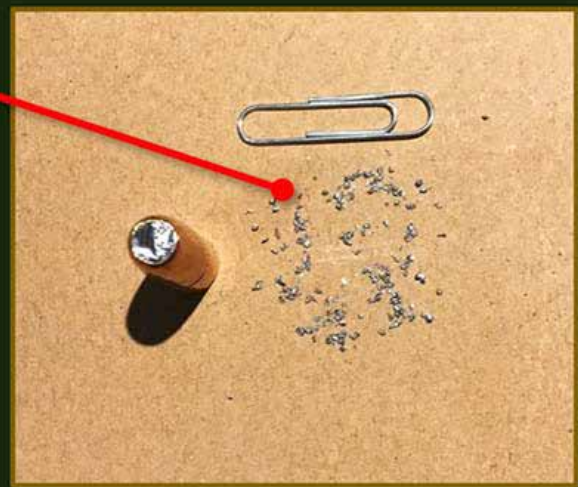
TO ASCERTAIN THAT LEAD FRAGMENTS WILL SHOW IN ORDINARY X-RAYS AND TO DETERMINE THE DIFFERENCE OF BONE FRAGMENTS AND LEAD FRAGMENTS



X-ray of bone fragments from butcher's meat saw



X-ray of very fine lead shavings from .375 H&H, 300 gr PMP lead-core bullet



EXTRACTS OF X-RAYS OF THROUGH-AND-THROUGH HEAD-SHOTS: SHOWING LEAD FRAGMENTS REMAINING IN SPRINGBOK SKULLS (LEAD-BASED BULLETS)

CONDENSED REPORT ON FINDINGS



Register: #05 / #01
Springbok Female 22kg (avg)
140m
Nose, Neck & Shoulder
.308 Win
150gr Sierra Pro Hunter
Speed @ crown 2,762 fps
Speed @ impact 2,300 fps
Energy transfer 1,761 ft/lbs

LEAD-CORE BULLET

200x PPTX
Zoom
TOTAL
Fragments:
376



Register: #02 / #02
Springbok Male 27kg (avg)
164m
R Head (through)
.303Br
150gr Hornady Interlock
Speed @ crown 2,587 fps
Speed @ impact 2,247 fps
Energy transfer 1,567 ft/lbs

LEAD-CORE BULLET

200x PPTX
Zoom
TOTAL
Fragments:
321

COMPREHENSIVE REPORT

<https://natshoot.co.za/hunting/aasvoels/ranchers-guide>



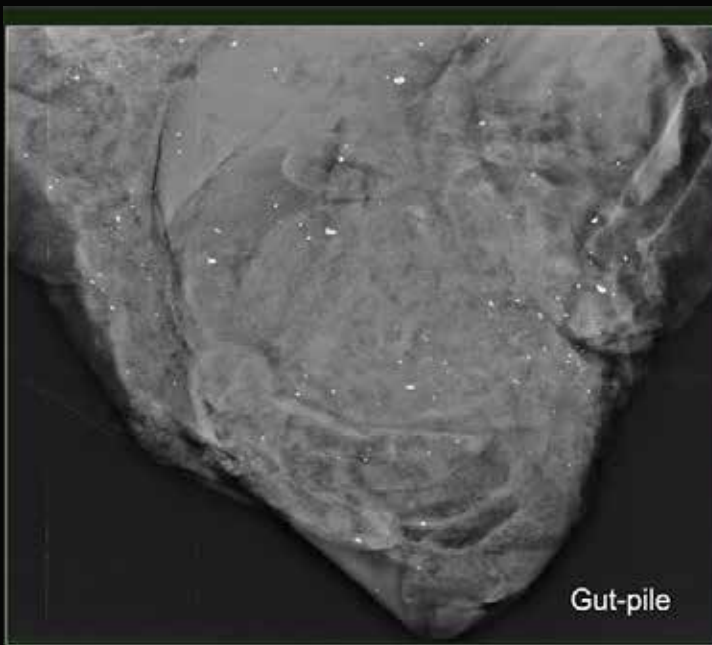
EXTRACTS OF X-RAYS OF THROUGH-AND-THROUGH BODY-SHOTS SHOWING LEAD FRAGMENTS REMAINING IN CARCASSES AND IN GUT-PILES (LEAD-BASED BULLETS)



Register: #03 / #04
Springbok Male 27kg (avg)
145m
Diagonal exit stomach (through)
.308 Norma Magnum
200gr Nosler Accubond
Speed @ crown 2,568 fps
Speed @ impact 2,319 fps
Energy transfer 2,387 ft/lbs

Core-bonded Lead Bullet

200x PPTX Zoom
TOTAL
Fragments:
92



Register: #03 / #04
Springbok Male 27kg (avg)
145m
Diagonal exit stomach (through)
.308 Norma Magnum
200gr Nosler Accubond
Speed @ crown 2,568 fps
Speed @ impact 2,319 fps
Energy transfer 2,387 ft/lbs

Core-bonded Lead Bullet

200x PPTX Zoom
TOTAL
Fragments:
124

CONDENSED REPORT ON FINDINGS



COMPREHENSIVE REPORT

<https://natshoot.co.za/hunting/aasvoels/ranchers-guide>

EXTRACTS OF X-RAYS OF THROUGH-AND-THROUGH BODY-SHOTS REMAINING IN CARCASSES AND IN GUT-PILES (COPPER-BULLETS)

CONDENSED REPORT ON FINDINGS



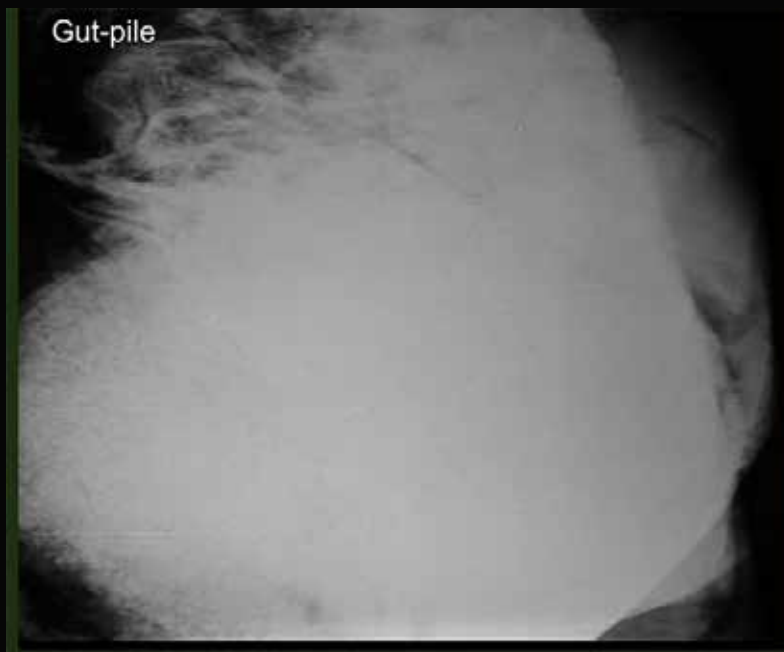
Register: #06 / #02
Springbok Female 22kg (avg
160m
Left flank exit stomach (throug
.25-06 Rem
90gr Hornady GMX
Speed @ crown 2,961 fps
Speed @ impact 2,527 fps
Energy transfer 1,276 ft/lbs

Copper-based Bullet

COPPER-BASED BULLET

200x PPTX
Zoom
TOTAL
Fragments:

5



Register: #06 / #02
Springbok Female 22kg (avg
160m
Left flank exit stomach (throug
.25-06 Rem
90gr Hornady GMX
Speed @ crown 2,961 fps
Speed @ impact 2,527 fps

COPPER-BASED BULLET

Copper-based Bullet

200x PPTX
Zoom
TOTAL
Fragments:

3

COMPREHENSIVE REPORT

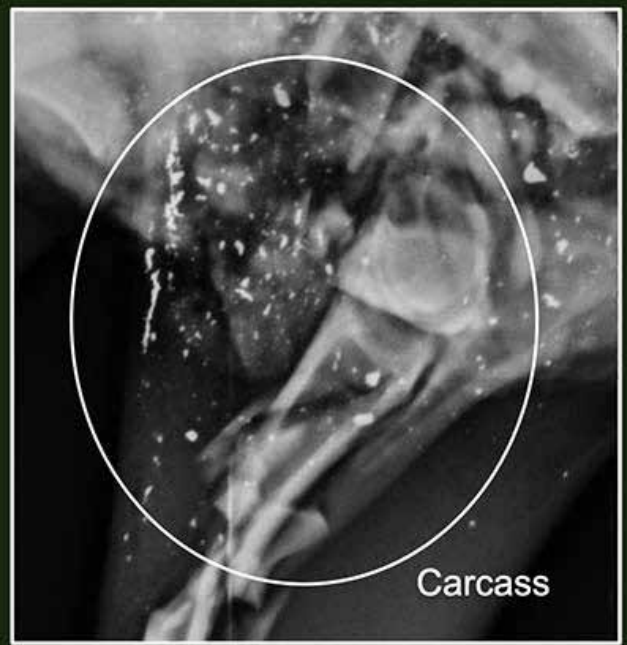
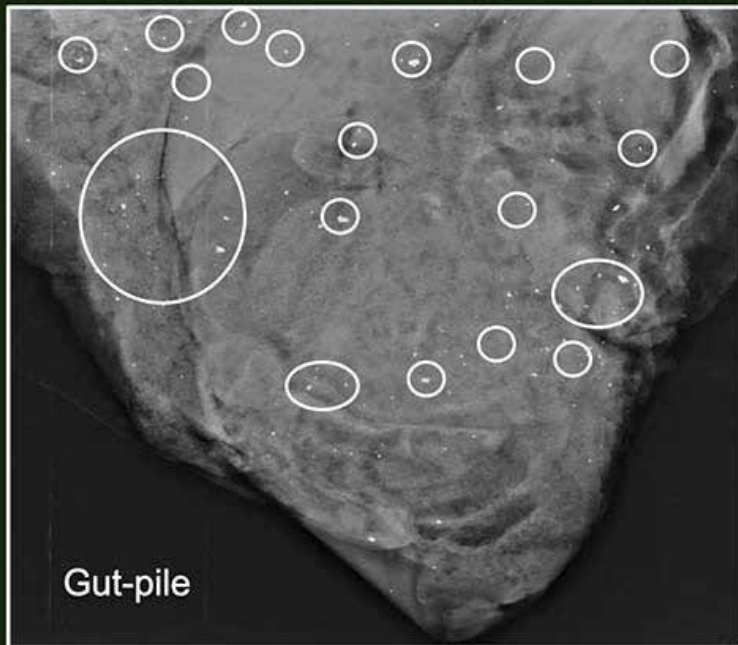
<https://natshoot.co.za/hunting/aasvoels/ranchers-guide>



THIS IS THE DANGER

Because of the high acidic nature of vulture digestive systems, small lead fragments like these in the previous slides are easily dissolved in the gut of vultures and are thus easily taken up in the blood stream.

Unfortunately, the build-up of lead in bone and tissue does not diminish, it just keeps on building up in the body until it has serious negative effects on the health of the bird leading to its eventual death.



COMPREHENSIVE REPORT

<https://natshoot.co.za/hunting/aasvoels/ranchers-guide>

CONCLUSIONS

SUMMARY

SPRINGBOK HARVESTED WITH LEAD-BASED BULLETS

- 1) Lead fragments were found in all 29 instances of springbok harvested
- 2) Significant high numbers of lead and copper-derivative bullet jacket fragments remained in carcasses and skulls
- 3) Copper-based bullets left significantly less fragments in carcasses and in gut-piles of harvested springbok when compared to lead-based bullets
- 4) In general, a remarkable larger percentage of lead and copper jacket fragments remained in springbok carcasses than the number of fragments being transferred to gut-piles in springbok harvested with through and through body-shots



5) It is known that very few carcasses of harvested game, are available for vultures on game farms as hunters take carcasses home - the absolute minimum wounded animals are not tracked and eventually harvested

6) It is perceived that vultures have far bigger and constant unintended access to lead fragments when feeding on carcasses made available at so-called vulture restaurants

7) It is perceived that vultures have far bigger and constant unintended access to lead fragments when feeding on skulls of game, which were harvested in culling operations by through and through headshots with lead-based bullets, than is the case on game farms / ranches

8) Logic dictates a similar pattern of high incidence of lead and copper-derivative bullet jacket fragments will remain in skulls, carcasses and gut-piles of larger game if harvested with lead-based bullets



PROPOSALS TO MINIMISE VULTURE ACCESS TO SECONDARY LEAD POISONING

A.

Research indicates that lead-based hunting ammunition was used in the harvest of more than 170,000 head of game in the 2019 hunting season

A1.

The best way to minimise access to lead in harvested game is to use copper-based bullets

A2.

- Copper bullets difficult to implement
- Costly to reload
- Undersupply of copper-bullet hunting ammunition in South Africa
- Price of copper-based hunting ammunition

B.

Minimise the access of vultures and scavengers to lead fragments in leftovers

It is clear that game farm/ranch and vulture restaurant owners have to be on the frontline of initiatives to minimise access of vultures to possible lead fragments.



PROPOSALS TO MINIMISE VULTURE ACCESS TO SECONDARY LEAD POISONING

C.

“Donors” of animal carcasses to vulture restaurants (domestic and wild) must try to use copper-based bullets for harvesting rather than lead-based bullets.

D.

When using lead-based bullets:-

Remove skulls and top sections of the neck before donating head-shot animals to vulture restaurants

E.

When using lead-based bullets:-

Do NOT make body-shot carcasses available to vultures at vulture restaurants. This is to prevent unintended secondary lead poisoning

F.

Do not dump skulls of head-shot game harvested with lead-based bullets as food for scavengers. Scavengers open such skulls for vultures to get into the deeper parts of the skull where they get access to lead fragments.

First option is to probably burn these skulls.



PROPOSALS TO MINIMISE VULTURE ACCESS TO SECONDARY LEAD POISONING

G.

Game cullers - use only copper-based bullets where possible.
If lead-based bullets are used then prevent easy access to skulls
- rather burn the skulls
- do not bury

H.

Lead fragments in skulls, carcasses and gut-piles are harmful to humans, scavengers and vultures

I.

Game farm owners should consider dumping gut-piles of game harvested with lead-based bullets in a deep hole and burn after each slaughter

J.

REQUEST:

It remains our responsibility to inform our hunter friends and hosts about the danger of unintended secondary lead poisoning in scavengers and vultures

THANK YOU FOR BEING CONSERVATIONISTS AT HEART AND BEING PREPARED TO ASSIST WITH THE REALISTIC CONSERVATION OF OUR VULTURES



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