

# History of the Namibian Wildlife Lead (Pb) Poisoning Working Group

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Additional Members

- (a) Central Veterinary Laboratory, MAWLR
- (b) Ministry of Health & Social Services



# History of the Namibian Wildlife Lead (Pb) Poisoning Working Group

## Human health

- No safe level – largest impact on foetus and children
- Lead phased out of most products – e.g. water pipes, cosmetics, paints & fuels
- Main remaining sources of lead – (i) industrial and mining sectors (generally localised)  
**(ii) bullets & sinker (widespread across the landscape)**

## Health of scavenging species

- The more a species is dependent on scavenging (e.g. vultures – obligate scavengers) the higher the lead levels
- Extensive scientific literature on subject – USA, Europe, less from Southern Africa – nothing from Namibia until recently
- First evidence came from California with the Condor – 56% of deaths were due to lead poisoning, from ammunition in game
- **Lead bullets fragment – into hundreds of pieces – far more than hunters realise**



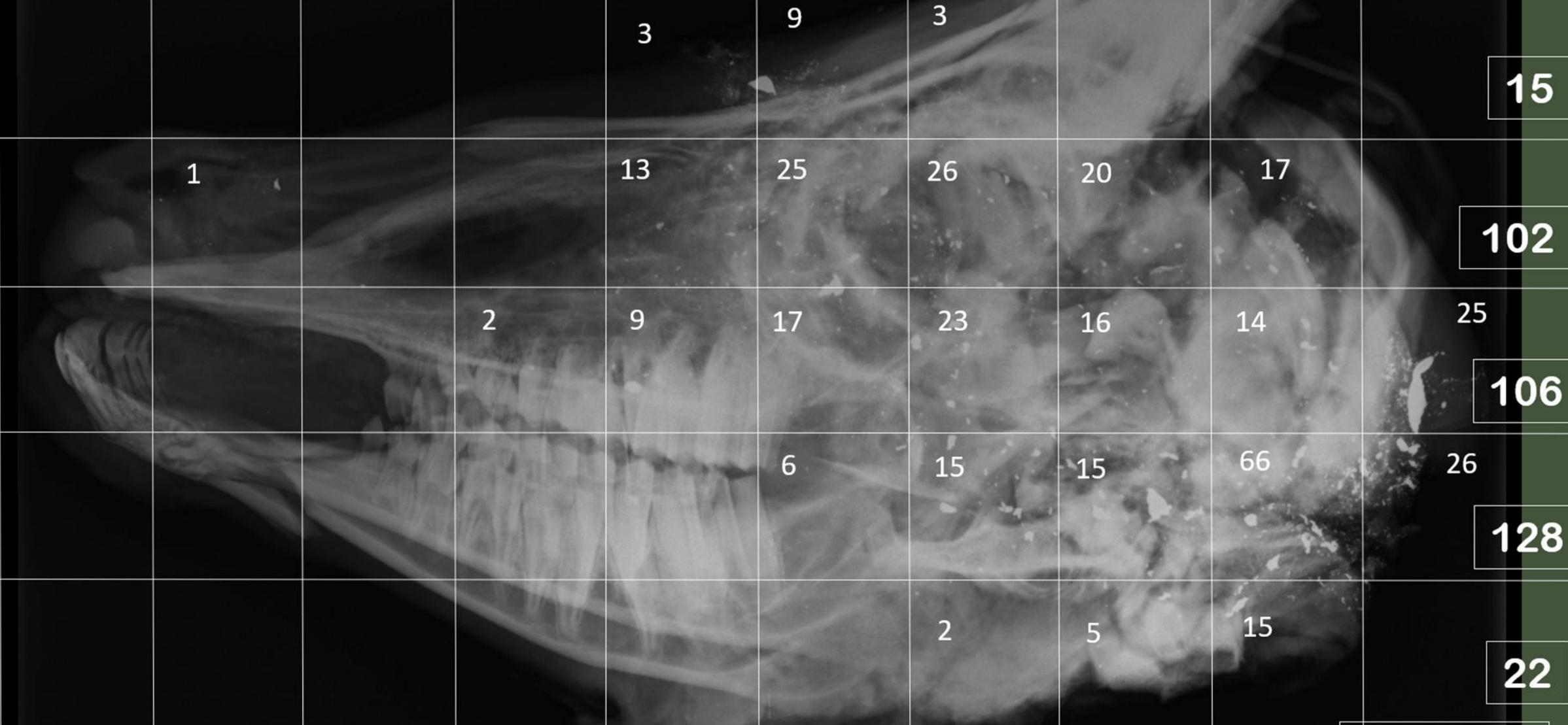
Register: #07 / #01  
Springbok Female 22kg (avg)  
150m  
Left flank (through)  
.243 Win  
95gr Berger Classic Hunter  
Speed @ crown 3,084 fps  
Speed @ impact 2,799 fps  
Energy transfer 1,652 ft/lbs

*Lead-core Bullet*

200x PPTX Zoom  
TOTAL  
Fragments:

**449**

X-ray enhanced x200 with grid to count lead fragments in skull.  
All fragments in all X-rays were counted in this manner



X-rays taken of all 36 carcasses and all 36 gut-piles with  
9 X-rays taken of skulls of animals with headshots.

**373**

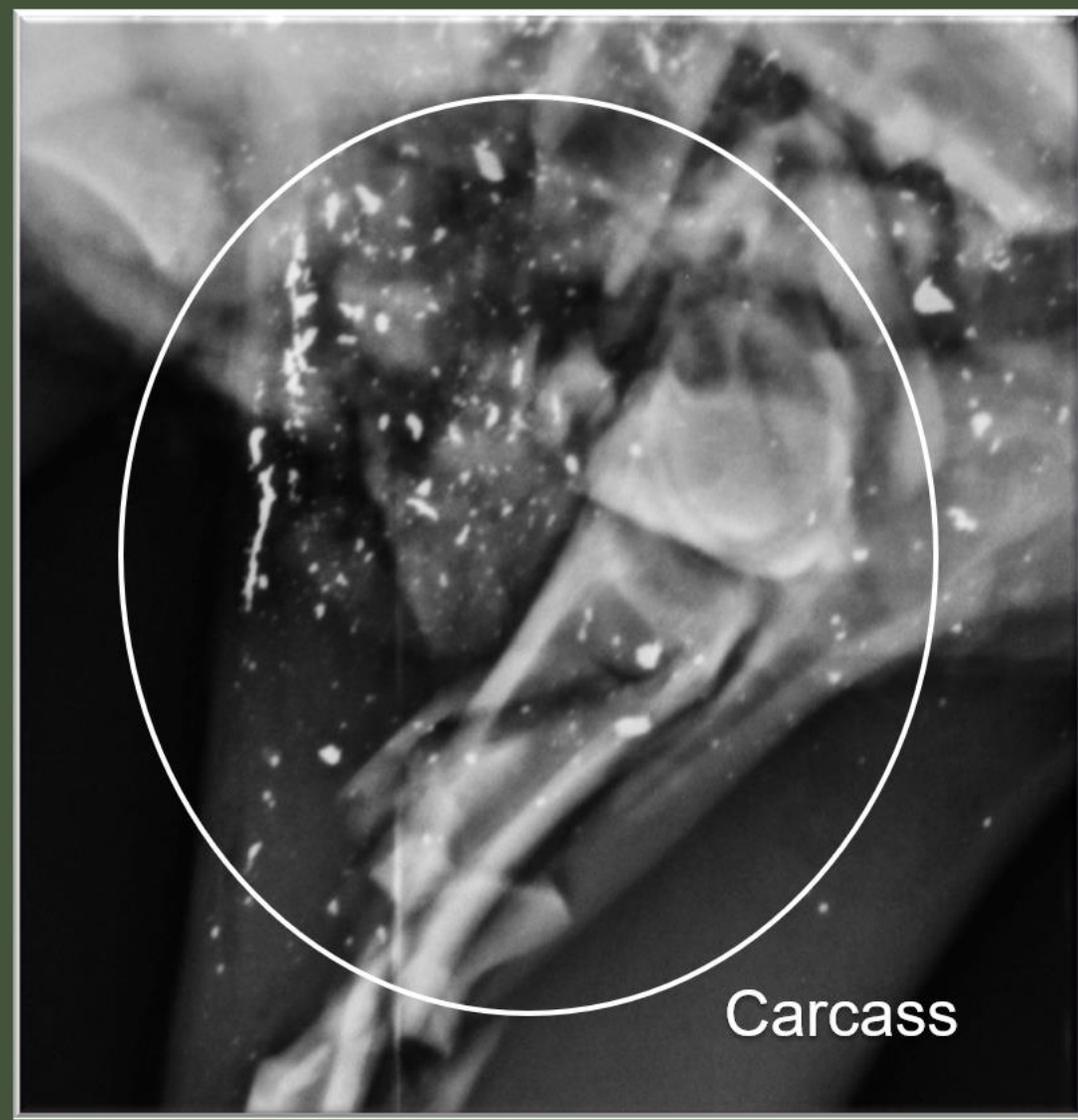
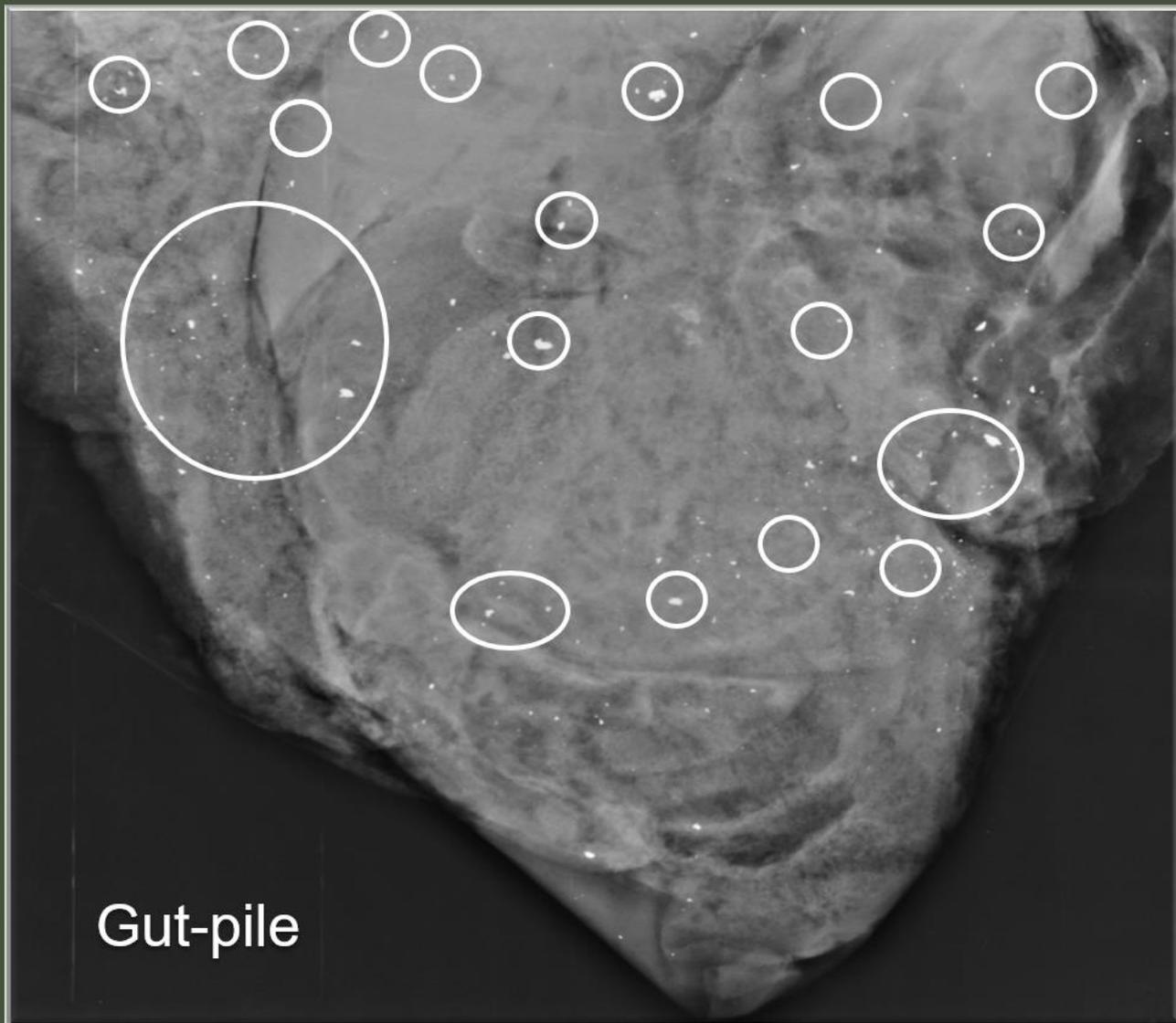
# How does the lead get into scavengers?

**Only from hunting – trophy, shoot-and-sell, culling, own use**

- Wounded animals that die in the veld
- Eviscerated internal organs dumped in veld
- Area of carcass damaged by bullet cut out and left in veld
- Predators shot & left in veld

Bullet entry and exit holes are places where vultures and other scavengers usually start feeding – high lead concentration areas

# This is the Danger



- Entry point to address lead (Pb) in Namibia came from within the wildlife sector
- First attempts to work with hunters in Namibia >15 years ago – no support!!
- Only with the enlightenment did we start making progress (DvdW)
- Set up the Namibian Wildlife Lead Poisoning Working Group chaired by MEFT
- Lead is also of significant concern for human health – farmers, culling teams, hunters and their respective staff and their children



## News

By Gail C. Thomson

6th October 2021

### How do you like your meat? Unleaded, please!

Lead is a toxic substance to humans and all other biological organisms, yet it is still used in bullets and fishing sinkers. Lead bullets fragment into hundreds of tiny pieces upon impact. These fragments pose a threat to game meat consumers, including people and scavenging species like vultures. Namibian stakeholders are working together to switch to lead-free bullets as a matter of urgency for the sake of human health and the environment.

[Read more...](#)

<https://conservationnamibia.com/blog/b2021-unleaded-please.php>

#### Topics...

Hunting

Birds

Conservation - general



<https://n-c-e.org/namibian-wildlife-lead-poisoning-working-group>

## NAMIBIAN WILDLIFE LEAD (PB) POISONING WORKING GROUP

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The Namibian Wildlife Lead (Pb) Poisoning Working Group (NWLPWG) was established in 2021 and comprises individuals and organisations that work alongside the Ministry of Environment, Forestry and Tourism (MEFT) to address the issue of lead toxicity in scavengers, and associated issues, in Namibia.

The issue of lead (Pb) toxicity in scavengers, particularly vultures, has been of concern for many years. The main source of lead is from ammunition, in the body or body parts of animals left in the veld after hunting, harvesting, culling or predator control. The people involved are thus hunters, farmers, harvesting and culling teams and predator control clubs and specialists. Hunting is coming under greater international pressure, so the sector needs to be seen to be progressive, professional and having high environmental standards. There is now a large body of evidence on the levels and impact of lead in scavengers – particularly vultures and condors – published in the international scientific literature, as well as good information on lead in vultures in Southern Africa. In addition, more manufacturers are now providing a wide range of lead-free ammunition, including in Southern Africa.

The NWLPWG aims to identify options for how Namibia could address the issue, and to explore the potential for regional collaboration. Most vulture species cover huge areas as they search for food. Individual vultures which have been fitted with GPS backpacks in Namibia have been recorded covering five other countries – Angola, Botswana, Zambia, Zimbabwe and South Africa. The same has been found for vultures fitted with GPS backpacks in neighbouring countries. Vulture populations are thus not national, but regional and the problem of lead poisoning is thus also a regional one.

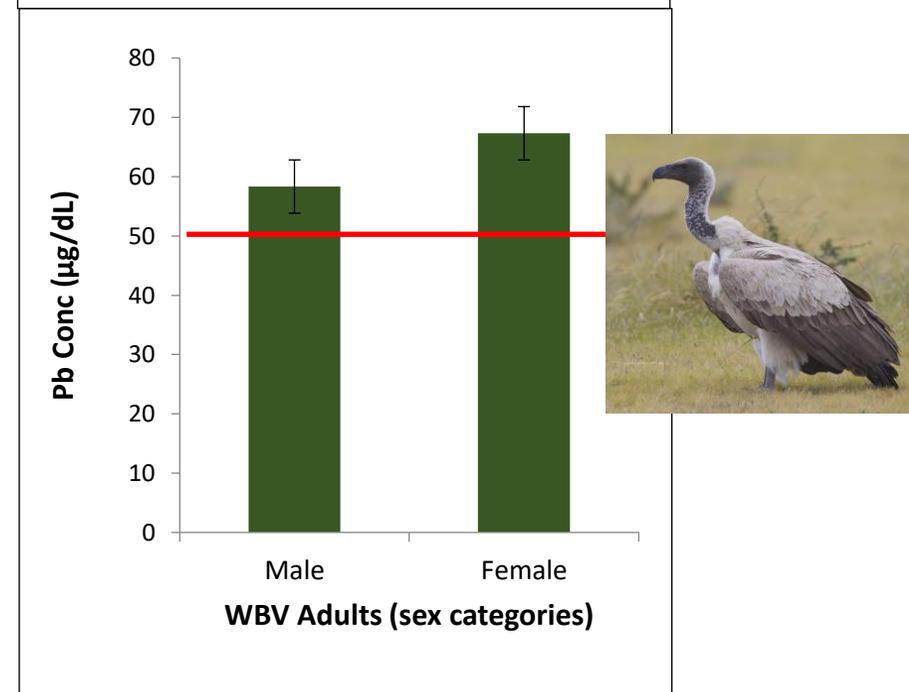
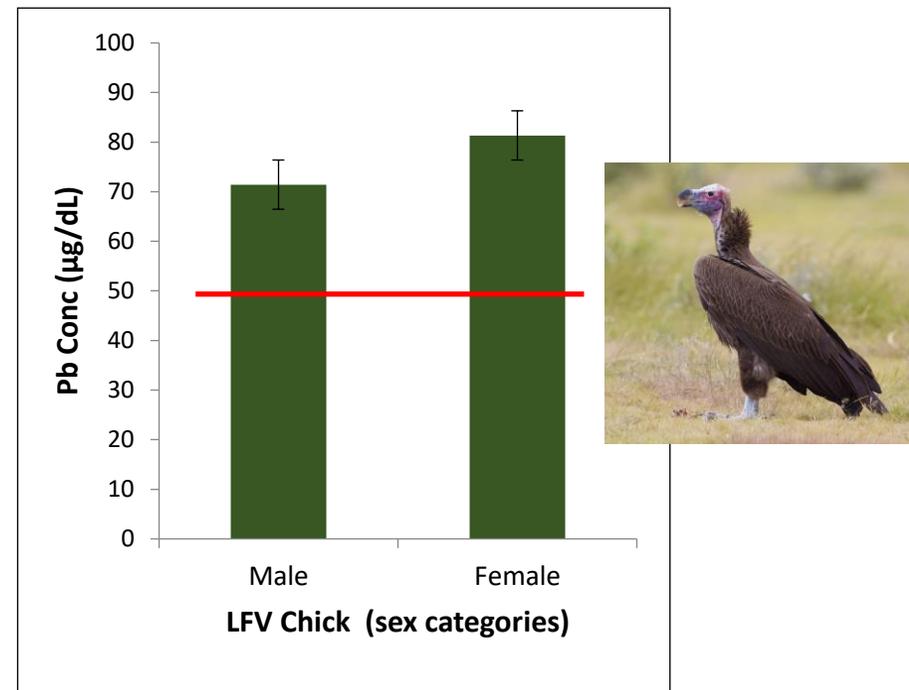
# Priorities & activities of the lead Working Group to date

## **Incentivising the transition of hunting and wildlife sector to lead-free ammunition**

- Monitor lead levels in scavenging birds such as vultures, eagles, kites, ...
- Monitor lead levels in scavenging carnivores and across different landscapes
- Share information with target groups on the negative impacts of lead ammunition on wildlife and people
- Provide information on lead-free alternatives
- Support MEFT to transition to using to lead-free ammunition
- Engage with arms and ammunition dealers
- Build a partnership with academia, Ministry of Health and others, including collaboration with the South African Lead Task Force.

# LEAD LEVELS IN VULTURES IN NAMIBIA

Type of tissue	Range	Interpretation
Blood ( $\mu\text{g}/\text{dL}$ )	<10	Background
	10-20	Mild to moderate subclinical effects
	20-50	Significant subclinical effects
	50-100	Clinical Poisoning
	>100	Severe clinical poisoning
Bone ( $\mu\text{g}/\text{g}$ )	<10	Background
	10-20	Subclinical to clinical poisoning
	>20	Severe clinical poisoning
Feather ( $\mu\text{g}/\text{g}$ )	>4	Threshold levels in wild birds



# LEAD LEVELS IN CARNIVORES IN NAMIBIA

Global status	Common name	Namibian status
Endangered	African Wild Dog	Critically Endangered
Vulnerable	Cheetah	Endangered
Vulnerable	Lion	Vulnerable
Vulnerable	Leopard	Vulnerable
Vulnerable	Black-footed Cat	Vulnerable
Least Concern	Spotted Hyena	Vulnerable
Near Threatened	Brown Hyena	Near Threatened

- Carnivore long bones & skulls
- Species - jackal, cheetah, hyaena, leopard

All bone samples tested positive for Pb.

Maximum [pb] = 14,59 mg/kg (cheetah skull)

Minimum [pb] = 0,17 mg/kg (hyaena skull)

Overall average [Pb] = 2,95 mg/kg

Would expect hyaena to have higher Pb than cheetah – cheetah was a captive animal fed shot game meat!



# Preliminary conclusions from these studies

- Alarmingly high levels of Pb in vultures, adults and nestlings
- Fits in with patterns worldwide, including Southern Africa – but worse in Namibia because of our relatively larger wildlife economy
- This is the first study on carnivores – just a starter project, but shows that:
  - (i) carnivores have significant lead levels in bones, and
  - (ii) research needs to be expanded significantly, to also include blood as well as other carnivore species across the country
- Collaborate with the Namibian Carnivore Working Group to get samples for analysis.

# What are the next steps?

1. Strengthen the data on lead in scavenging birds and carnivore.
2. Extend the monitoring to other groups, e.g. waders in Walvis Bay from harbour activities; crocodiles and otters from sinkers.
3. Look at lead levels in people – focus on hunters and game farmers, their workers and families.
4. Test for lead levels in meat sold in supermarkets, etc.
5. Share results with selected groups – but don't frighten the public away from game meat.
6. Provide info on lead-free ammo.
7. Introduce an environmental levy on lead ammo to subsidise non-lead ammo, and to support info sharing and focused research.
8. Work with game meat outlets to insist on game meat certification hunted only with non-lead ammo.
9. Support MEFT to change to lead-free ammo.
10. Introduce regulations to stop the sale of lead ammunition in the wildlife sector.

Thank you