

Summary of Zoom meeting on lead (Pb) from ammunition in scavengers, particularly vultures – how best to address this situation in Namibia?

21 July 2021, 10h00 – 11h15

Participants

Linda van der Heever (Birdlife South Africa)

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Background

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.

This issue was raised with the Namibia Professional Hunting Association (NAPHA) some 12 years ago and, while the matter was discussed, no progress was made in addressing the situation. The main reservations from the hunters were:

- No direct evidence from southern African,
- General levels of lead in the environment (in petrol at that time, batteries, fishing sinkers, etc), so why pick on hunters and ammunition,
- No viable alternative ammunition available.

There has now been a change in the leadership in NAPHA, younger, more open and with strong conservation ethos. Also, hunting is coming under greater international pressure, so the sector needs to be seen to be progressive, professional and having high environmental standards. Both the Ministry of Environment, Forestry & Tourism (MEFT) and most of the Namibian NGO sector support hunting and sustainable use of wildlife as essential components of Namibia's market-based conservation philosophy, which has underpinned its success to date. An environmental NGO tackling the issue of lead in ammunition could be seen by many members of the hunting fraternity as an attack on hunting; in Namibia this is unlikely to be the case as the NCE actively and publicly supports hunting and counters anti-hunting and animal rights propaganda.

A number of issues have changed since the previous engagement with NAPHA some 12 years ago:

- 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;
- There is now good information on lead in vultures in Southern Africa;
- More manufacturers are providing a wide range of lead-free ammunition, including in Southern Africa.

South Africa has established a national Lead Task Team of the National Wildlife Poisoning Prevention Working Group which aims to ensure that wildlife in South Africa is not harmed by exposure to lead.

Both Ian Rushworth (Chairperson) and Linda van der Heever are members of the Task Team and actively involved in addressing this issue. We reached out to them to draw on their experience, to discuss the situation and 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 satellite-collared vultures in Namibia have been recorded covering five other countries – Angola, Botswana, Zambia, Zimbabwe and South Africa. The same has been found for vultures collared in neighbouring countries. Vulture populations are thus not national, but regional and the problem of lead poisoning is thus also a regional one.

Discussion points

1. Lead ammunition

- Lead bullets fragment on impact – into larger and smaller fragments, including into micro- and nano-sized particles - and spread through an animal far more extensively than is appreciated. The highly acidic stomach of predators, scavengers and particularly vultures aids absorption of the lead.
- The small fragments are more problematic than larger ones – small fragments collectively have a large surface area and are absorbed into the blood stream, while larger fragments, while harmful, tend to pass through the digestive system.
- Lead has no role in biological systems. Even the lowest levels are toxic. There is no threshold level below which it is considered safe.
- While there are other sources of lead in the environment, e.g. from industrial processes, batteries, fishing sinkers, none of these delivers lead into the body of animals that are then consumed by scavengers. It is the lead from bullets that is poisoning scavenging species, particularly vultures.
- Head shots cause huge fragmentation, body shots end up with fragments widely spread through the muscle and viscera of animals. Most hunters do not believe the level of fragmentation until they see an x-ray of a shot animal.
- Wounded animals die in the veld, predators shot for human-wildlife conflict purposes are often left in veld, viscera and other obviously contaminated body parts from the bullet are often discarded in the veld – all with lead.
- Hunted animal heads and internal organs are often given to staff, e.g. skimmers and trackers, or local communities. Although there has been no research carried out on lead levels in people involved with the hunting sector in southern Africa, high levels of lead are expected.
- The European parliament has recently taken a decision to phase out lead in ammunition because of its toxicity to people and wildlife.
- Many premium and large calibre bullets are lead free. Indeed, before lead was an environmental issue, these non-lead bullets were designed for the purpose of greater effectiveness than the lead counterparts.
- The phasing out of lead in ammunition should not be approached as an absolute. There may be old firearms, and some calibres of firearms that require lead ammunition. The emphasis should rather be to move the wildlife sector away from lead over the next few years to the extent that some 90+% of ammunition is lead-free.

2. Copper ammunition

- Concerns have been raised by some hunters about the potential toxic risk of copper (Cu) ammunition. Unlike lead, copper is an essential metal in biology. It is not intrinsically toxic

and is required in micro levels. Second, copper does not fragment into many small micro- and nanoparticles. The larger copper fragments will pass through the digestive tract of scavengers (and people) and not be absorbed. Copper toxicity has never been an issue and is unlikely to be.

3. Lead-free ammunition

- In the past, lead-free ammunition had to be imported from overseas. It was more expensive than lead ammunition. However, to the trophy hunting / conservation hunting sector, this was such a small part of the overall economy as to be insignificant. The relative cost of lead-free ammunition was more significant to harvesting (night-cull), biltong hunting, own use and predator control sector but again, in the larger context, not that significant to be a valid reason to continue poisoning scavengers.
- When weighted against the environmental costs of poisoning vultures (and other scavengers – there has been little work done on lead in mammalian scavengers) and the impact of a decline in vulture numbers on the health and hygiene of the veld, the increase in the cost of ammunition is insignificant.
- Fortunately, in the past few years, “Badger” an ammunitions manufacturer in Pretoria, South Africa, has been licensed to produce seven different calibres of lead-free ammunition, including .223, .308 and .375 at a considerably lower price than the overseas imports. This ammunition has been tested and found to be as effective and accurate as their lead equivalents, and without the need to shoot in the different ammunition to adjust the sight setting.
- It is also easy to load one’s own lead-free ammunition, which many hunters prefer.
- Some premium and large calibre bullets moved to lead-free options some time ago and before environmental toxicity became an issue, to improve ammunition performance.
- There are a few types of non-lead ammunition which are not yet as effective as their lead counterparts, or that require a change in hunter behaviour. These include .22 – hunters need to be closer to the target or move to a higher calibre, and shotgun using steel shot - the effective range is also somewhat reduced.
- Non-lead ammunition for other calibres of firearms show no disadvantages – shot accuracy, hitting power, animal welfare, etc. are all good. Ezemvelo KZN Wildlife (Natal Parks Board) now use non-lead ammunition for all their culling operations without problems.

4. Next steps

- Monitor lead levels in vultures in Namibia. There are three main approaches:
 - Blood lead (reflects more recent exposure – up to about 40 days)
 - Feather lead (longer term exposure)
 - Bone lead (long-term exposure)
- Easiest to collect blood (0.5 ml – branchial vein – then kept in fridge or frozen) when ringing chicks and during capture operations of free-flying birds.
- Have not found a lab in Namibia to analyse the lead in blood – may need to be sent to South Africa, under existing institutional arrangements, e.g. from the Veterinary Lab.
- Cost of analysis will be covered by NCE.
- Also important to collect vulture bone samples from all causes of mortality (poison, electrocution, drowning, etc). Put out a call to Vultures Namibia, Powerline programme, MEFT staff, etc.

- May be able to find facilities to analyse bone for lead in mining / geology sector – contact university geology Depts and Chamber of Mines.
- There is very little data on lead in mammalian scavengers. Researchers working on hyaena, lion, jackal will be asked to (a) collect blood when immobilising animals for collaring, and (b) collect bone sample from any mortalities. Professional hunters will be asked to collect blood and bone sample from all trophy hunts, as a condition of the permit.
- Standard protocols for all sample collection and curation need to be developed and distributed to key participants.
- To incentivise the transfer to non-lead ammunition, two economic instruments could be used: (i) a tax on lead ammunition (and later also extended to fishing sinkers) – discuss with EIF under their environmental levy programme, and (ii) a waiver on import tax for lead-free ammunition.
- Wildlife authorities should be at the forefront of changing to lead-free ammunition, to lead by example.
- Sharing of literature on lead in scavengers and related, including papers provided by Linda have been uploaded to the EIS e-Library (www.the-eis.com). There is a special edition of Ambio (Swedish journal) specifically on lead, ammunition and the environment: Vol 48 Issue 9 (September 2019): <https://link.springer.com/journal/13280/volumes-and-issues/48-9>.
- Linda will provide a list of lead-free ammo available from Badger and its performance characteristics compared to the lead equivalent (have it got that correct Linda?).
- The Namibian group will meet to turn the above next steps into actions with names and timelines.

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Some additional post-meeting thoughts:

- Many German farmers and professional hunters in Namibia use German calibre firearms and ammunition, e.g. 6.5 mm, 7 x 57 / 64 mm, 8 x 57 mm, 9.3 x 62 mm. We need to see how these can be procured if not manufactured by “Badger” in SA.
- The new (draft) management plans for all four of the coastal parks of Namibia, stretching from the Orange River to the Kunene Rivers (i.e. 98% of Namibia’s coast, excluding only the urban areas) have a requirement that all lead sinkers are banned within 6 months of the formal approval of these management plans. There are many alternatives to lead for sinkers – so the issue of tackling lead in the environment is being addressed more broadly than just ammunition.
- The issue of human health – particularly that of children who are most vulnerable to lead poisoning – has been under-represented in the discussion on lean ammunition. It would be important to engage with the game meat market, e.g. Hartlief and other meat processing facilities, Biltong suppliers e.g. Closwa, Elite, Fourways, and game meat retail distributors, to insist that all game that they purchase must be harvested using lead-free ammunition.

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