

# Minutes of the 10th Lead Ammunition Group meeting

24 February 2014

WWT, Slimbridge, Gloucestershire

## Attendees

Mr John Batley

Mr Stephen Crouch

Mr Ian Coghill

Mr Jeff Knott

Dr James Kirkwood

Prof Len Levy

Dr Ruth Cromie

Mr John Swift (Chairman)

Mr Mark Tufnell

Sir Barney White-Spunner

## Observing

Mrs Elaine Kendall - (Defra)

Mr Ashley Smith - (Defra)

Mrs Kate Fouracre - (Defra)

## Secretariat

Dr Matt Ellis (BASC)

## 1. Welcome and introductions

1.1 The Chairman thanked Martin Spray and the WWT for hosting the meeting.

1.2. Apologies were received from Dr Kevin Hargin and Dr Debbie Pain, who was replaced by Dr Ruth Cromie.

## 2. Minutes of the 9th meeting

2.1. The Chairman clarified the procedure for the approval and posting of the minutes.

2.2. It was questioned whether the numbers provided by the gun trade representative in the 9th meeting (section 2.12) are to be taken as agreed by the group. The Chairman advised that the figures are simply a source of information provided by the relevant specialist stakeholder representative that members may note.

2.3. Concerning point 3.2. of the 9th meeting minutes it was clarified that contextualising risks hadn't been included in the terms of reference for the PERA subgroup. It was noted that the need to contextualise the risks may be revisited in the future and that the risk assessments and EFSA (2010) already covered, in considerable detail, other sources of dietary lead.

2.4. With reference to section 5 of the 9th meeting minutes the game dealers' representative advised that approximately 15% of game may pass through Approved Game Handling Establishments. The remainder passes through more informal channels requiring local authority licencing without veterinary supervision.

### 3. To receive the conclusions of the Primary Evidence and Risk Assessment subgroup for the wildlife risk assessments

3.1. The Chairman introduced a draft document tabled by Professor Levy on behalf of the PERA subgroup setting out a consensus set of conclusions based on the two wildlife risk assessments (see action point 9.1 of the 9th LAG meeting). He stressed that there had been much discussion of the draft within the subgroup and that some aspects, especially possible numerical estimates, remained to be completed and agreed. The group was not at this meeting being asked to consider those aspects or approve the draft in its entirety, but to use the draft as the basis for settling its own view on some key questions.

3.2 The group then proceeded through the subgroup's draft and agreed the following:

3.3. Is wildlife in the UK exposed to lead from ammunition?

The group accepts that some 6,000 tonnes of lead are dispersed annually from ammunition in the UK. This comes from gunshot and /or bullets from game shooting, clay shooting, pest control and deer stalking. Potentially this is available to wildlife. Exposure potentially occurs whenever shooting takes place and spent ammunition remains on/in soil or water or in the bodies of shot animals.

The group noted the comments of the gun trade representative that lead shot makes up approximately 5,100 tonnes of the total lead deposited from ammunition (bullets and shot). Furthermore, the proportion of lead shot deposited in and around clay shoots is approximately 60% of the total gunshot deposited.

**Action Point 10.1.** The group requested a written report from the gun trade representative to substantiate estimates of the quantity of lead ammunition dispersed annually into the environment.

3.4. Are there pathways from spent lead ammunition to wildlife?

The group accepts that five potential source-pathway-receptor models can be identified:

1. Direct ingestion of spent lead ammunition from the environment.

2. Indirect ingestion of spent lead ammunition by predators/scavengers in the bodies of their prey.
3. Movement of spent ammunition lead via plants into their consumers
4. Movement of spent ammunition lead via soil ingestion or soil organisms/invertebrates into their consumers
5. Movement of spent ammunition lead from embedded shot/bullets into body tissues/organs.

The group accepts that evidence of pathway 1 is available for many species of wildfowl, some other waterbirds and gamebirds, in the UK and overseas. Evidence exists for pathway 3 and 4, but there are few studies from the UK. A possible pathway 4 is identified for woodcock. There are few studies of pathway 5.

The group noted however that the woodcock pathway is subject to confirmation in the UK.

The group accepts that a range of other species of wildlife may be exposed, although few relevant studies have been done in the UK. These include corvids and other scavengers (pathway 2). Ground-foraging passerines and pigeons, as well as other forms of wildlife, including small mammals/frogs may be exposed through pathway 3 and 4 in areas of high shot-fall (such as clay target grounds).

The group noted however that the pigeon work is based largely on studies of mourning doves in America.

The group noted in general that the lack of studies in the UK of any or all of the pathways in wildlife species does not necessarily mean they do not exist. No conclusions should be drawn from the lack of studies in the UK.

### 3.5. Are there significant risks to the welfare of wildlife?

The group accepts that sub-clinical and clinical, behavioural, developmental and reproductive impacts of above-background tissue lead levels from ingested lead ammunition in wildlife can be expected to cause welfare impacts for many animals which ingest ammunition, as well as all those animals which die from lead poisoning.

The group noted however the need to clarify that welfare impacts scale relative to the degree of lead ingestion and that there are potentially species-specific differences in sensitivity to lead that may further affect this.

### 3.6. Are there significant risks to wildlife in terms of effects on individuals and population processes?

The group accepts that deaths and impaired reproduction of individual animals, caused by direct and indirect ammunition lead poisoning, will affect death rates and birth rates and therefore

population processes. Adverse effects from ingested ammunition lead, including death, occur or are likely to occur in individual birds (and some other animals) where source-pathway-receptor linkages occur or are likely to occur. To date they are recorded in the UK for wildfowl and some other waterbirds, some gamebirds, red kite and possible other raptors (buzzard/peregrine falcon).

### 3.7. Are there significant risks to wildlife in terms of effects on population size?

The group accepts that the extent of lead exposure in some wildfowl species suggests the potential for effects on population size, although the detailed studies necessary to establish this have not been undertaken in species found in the UK. The extent to which lead poisoning mortality may be compensated for by other factors affecting survival is unknown, and therefore population size may or may not necessarily be impacted.

### 3.8. Differences between risk assessments

The group noted that differences remain in the following areas:

- a) Harradine & Leake focused on England (UK) whereas Pain & Green cited more studies from elsewhere using evidence about pathway steps from non-UK studies where applicable to the situation in the UK.
- b) Detail of source-pathway-receptor linkages was assessed in greater detail in Pain & Green than Harradine & Leake.
- c) Assessments of reliability/applicability of evidence sources are given for whole studies addressing multiple topics in Harradine & Leake whereas Pain & Green used only those parts of studies sufficiently sound and relevant to a particular pathways step and mentioned caveats.

## 4. To receive a report from Dr Ruth Cromie on the methodology and results of the WWT Wildlife Health Unit's compliance monitoring investigation

4.1. The group received a presentation by Dr Ruth Cromie on the WWT Wildlife Health Unit compliance monitoring investigation and perceived barriers to behaviour change. The study results suggest that there has been no improvement in levels of compliance.

4.2. The WWT has no imminent plans to publish this work, but a written report will be produced for the group to consider.

**Action point 10.2.** Dr Cromie to produce a written report for the group setting out the methodology and results of the compliance monitoring study.

4.3. It was questioned whether the sample sizes in the study (109) were sufficiently large. Dr Cromie replied that a power analysis had been conducted based on an assumed rate of non-

compliance of 70% (as found in the 2010 Defra compliance study). This found that a minimum sample size of 30 would be required to produce robust results.

4.4. There was discussion over the need to enforce compliance of the current law.

4.5. The group noted comments from the shooting representative that a recent unpublished survey of game consumption by BASC and CA members suggests that 90% shooters report never selling their ducks.

4.6. The group noted the comments of the game dealers' representative that one large UK game dealer buys 90% of their ducks from Scotland and sells to butchers all over the UK (including England). That said, the group also noted that a large number of ducks is known to be shot and marketed in England and that game dealers who provided the analysed ducks had said the ducks had been sourced locally.

4.7 The group agreed that there is evidently a continuing risk to be addressed due to continued lack of compliance.

## 5. To list and consider mitigation measures for the risks identified in the risk assessments for both human health and wildlife

5.1. The group discussed the need to establish a mitigation subgroup. The group felt that it was difficult to say whether this would be necessary without having begun to address the task. However, it was felt that this needed to be done as quickly as possible. The chair suggested establishing a small mitigation subgroup, and the group agreed, with Sir Barney White-Spunner agreeing to chair the subgroup.

5.2. The Chairman invited LAG members to join the group and Jeff Knott, Ian Coghill and Ruth Cromie agreed to join.

**Action point 10.3.** An email address will be created specifically for the purpose of compiling possible mitigation measures and will be circulated to the group.

**Action point 10.4.** The mitigation subgroup will hold its first meeting at the CA in London on 26th March, in time to report to the next LAG meeting.

## 6. To decide possible external reviewers for the wildlife risk assessments

6.1. The group agreed that, in the interests of speed, that no external reviewers will be sought for the risk assessments.

## 7. To consider knowledge gaps

7.1. The Chairman extracted and collated the knowledge gaps outlined in the various risk assessments and presented them to the group.

7.2. Data on consumption levels of wild shot game. It was reported that BASC and CA were conducting a new survey of game consumption amongst their members, and this would help to inform this knowledge gap.

7.3. Appendicitis. It was felt that this was not a priority for the LAG and will not be pursued. However, it was noted that the immunological role of the appendix has been receiving increasing attention.

7.4. Lead aerosol and dust from firing ranges. It was felt that this was not a priority as it was dealt with by the military and target rifle associations.

7.5. The knowledge gaps identified in the human health via livestock risk assessment were acknowledged as important, but unlikely to impact on any advice given to ministers and so they will not be pursued.

7.6. The majority of knowledge gaps identified in the Harradine & Leake risk assessment were acknowledged. It was felt that they generally reflected the authors' cautionary approach.

7.7. It is widely assumed that different birds and other animals respond to lead (above their normal background levels) in similar ways. It was felt that this knowledge gap was important, and that the effects of lead had been seen to vary in humans due to health, environment and stress.

7.8. Modelling to help assess different scenarios of exposure to, and consequences of, lead. The group agreed that this was broadly similar to the approach currently being undertaken by the subgroup, and that this should be available to the main group shortly.

7.9. The following additional gaps were identified by the subgroup and acknowledged by the LAG: Woodcock exposure through contaminated earthworms; corvid/raptor/mammal exposure through scavenging lead-shot bird/animal carcasses/discarded gralloch; woodpigeon exposure; invertebrate/passerine/small mammal etc exposure in high density shot fallout areas; extent of impacts derived from localised high density shot fallout areas on wildlife populations at regional/other levels; impacts of ammunition lead on UK wildlife population size and processes using measurements of effects of lead on demographic rates and simulation models of population processes.

## 8. To take decisions concerning the publication of risk assessments on the LAG website

8.1. There was discussion over the publication of the risk assessments with one member of the group keen to publish the assessments as soon as possible. However, the group reaffirmed their

decision to postpone posting the risk assessments on the LAG website until they have reported to Ministers. It was felt that this was important to allow the group to consider any and all mitigation options without being pressured by interest groups.

**Action Point 10.5.** The decision on publication of the risk assessments to be revisited at the next LAG meeting

8.2. The Chairman of the PERA SG reported that the human health, livestock and Harradine & Leake wildlife risk assessments were finalised. However, the Pain & Green wildlife risk assessment requires a further four weeks to complete.

## 9. To discuss the next report to Ministers

9.1. It was felt that this was best discussed once mitigation had been addressed in more detail.

## 10. Any other business

10.1. No other business was brought to the group.

## 11. Date of the next meeting

11.1 The next meeting will be held on 16 April 2014. WWT have again agreed to host the meeting at Slimbridge.

## 12. Action points carried forward

**Action Point 6.2.** Progress report after one year will be submitted April 2013.

### Carried forward

**Action Point 6.3.** The Primary Evidence and Risk Assessment Subgroup will compile a list of all new papers for inclusion on the PEL. These papers will be categorised according to geographical scope and relevance and tabled at the next meeting of the Lead Ammunition Group for approval prior to posting on the website.

Outstanding. This will be completed once all four risk assessments have been accepted by the LAG.

**Action Point 8.1.** All to consider mitigation measures for the risks identified in the two completed risk assessments.

**See Action Point 10.4.** All members of LAG encouraged to submit mitigation measures to the subgroup.

**Action Point 9.1:** PERASG to produce a consensus conclusion for the wildlife risk assessment minority reports

Completed

**Action Point 9.2:** Any further technical comments on the human health risk assessment to be sent to the PERASG for consideration

Completed

**Action Point 9.3:** Circulate AHVLA paper on risks to livestock from feeding in areas surrounding clay shooting ground to members of PERASG

Completed

**Action Point 9.4:** PERASG to finalise the wildlife risk assessments

One completed, one to be completed within four weeks.

**Action Point 9.5:** All to think of two suitable external reviewers for the wildlife risk assessment.

No longer necessary

**Action Point 10.1.** A report to be prepared and circulated to the group outlining substantiating the calculations used to estimate the quantity of lead ammunition dispersed annually into the environment for internal circulation to LAG

**Action point 10.2.** Dr Cromie to produce a report outlining the methodology and results of the compliance monitoring study for internal circulation to LAG

**Action point 10.3.** An email address will be created specifically for the purpose of compiling possible mitigation measures and will be circulated to the group.

**Action point 10.4.** The mitigation subgroup will hold its first meeting at the CA in London on 26th March, in time to report to the next LAG meeting.

**Action Point 10.5.** The decision on publication of the risk assessments to be revisited at the next LAG meeting