

Minutes of the 9th Lead Ammunition Group meeting

19 December 2013

Defra, Nobel House, London

Attendees

Mr John Batley

Mr Ian Coghill

Prof Rhys Green

Dr John Harradine

Mr Jeff Knott

Dr James Kirkwood

Prof Len Levy

Dr Ruth Cromie

Mr John Swift - (Chairman)

Mr Mark Tufnell

Sir Barney White-Spunner

Observing

Dr Kevin Hargin (Food Standards Agency)

Mrs Elaine Kendall (Defra)

Mr Ashley Smith (Defra)

Mrs Kate Fouracre (Defra)

Secretariat

Dr Matt Ellis

1. Welcome and introductions

1.1. Thanks were extended to Defra for providing the meeting room and facilities.

1.2 The members of the Lead Ammunition Group, the Primary Evidence and Risk Assessment Sub-Group and observers introduced themselves.

1.3. The group welcomed Kate Fouracre as an additional Defra observer.

1.4 The group also welcomed Dr Ruth Cromie as Dr Pain's alternate for this meeting, and Prof Green and Dr Harradine in order to present their risk assessments.

1.5. Apologies were received from Dr Alistair Leake and Mr Stephen Crouch.

2. Presentation of the Risk Assessments for Wildlife

2.1. The Chairman of the Primary Evidence and Risk Assessment subgroup apologised on behalf of the subgroup for not being able to produce a consensus report in the time available, necessitating minority reports (see 6.2. of the 8th meeting minutes). However, he was encouraged that the reports arrived at some broadly similar conclusions.

2.2. The group received presentations on the risks to wildlife from the ingestion of lead from ammunition and the following points were raised:

2.3. It was asked whether the 3% lead shot ingestion rate observed in some galliformes meant that only 3% of the population of these birds were exposed to lead shot. It was clarified that the figures are the proportion of birds sampled that have ingested shot in the gastrointestinal tract or gizzard at any given time. The proportion of birds that ever ingest shot at any time in their life would be higher than this.

2.4. It was clarified that all gamebirds shot with lead gunshot and tested in the Pain et al. (2010) paper contained elevated tissue lead levels regardless of the presence of radio-opaque fragments on the x-ray. Furthermore, there was correlation between the lead level in the tissue and the number of fragments observed on x-ray.

2.5. There was discussion over the relative quality of the two minority reports. It was felt by some that there was little difference in quality and that they should be seen different approaches. However, Professor Green argued that two shortcomings in the Harradine/Leake (H/L) wildlife risk assessment had prompted their report, namely:

- The H/L report mostly assessed each S-P-R linkage set as a whole whereas the P/G report assessed evidence for each step in the S-P-R linkage set separately. This is the main reason that the P/G report covered four times as many publications as the H/L report.
- The H/L report tended to estimate the likely levels of impacts as being lower than the P/G report, possibly as a consequence of the first point.

2.6 Professor Green argued that the major procedural difference in the risk assessments was that H/L had approached the literature on a paper-by-paper basis, whereas P/G was based on a step-by-step basis and used sections of relevant papers that the authors believed were robust enough to support source-pathway-receptor linkages. It was reiterated that despite the differences in approach the conclusions were broadly similar.

2.7 In response, Dr Harradine made clear that:

- The H/L risk assessment had initially focused on the source papers as indicated but, in light of discussion, had moved towards assessing each main S-P-R linkage. Each evidence source was scrutinised, as were the secondary sources used in each one, to ensure all

information for the risk assessment was relevant and scientifically reliable. The strengths and weaknesses of evidence sources are set out in the report to ensure the transparency of interpretation and conclusions.

- The risk assessment had focused on the risks in England (UK) and used evidence from elsewhere where this appeared relevant.

2.7. The point was raised why an alternative report had been produced, rather than preparing a detailed commentary outlining the perceived problems with the original H/L risk assessment. In reply Professor Green argued that there had been several unsuccessful attempts to alter the structure of the H/L report to produce a mutually agreeable format, but that it was eventually felt by P/G that an alternative report was needed. Work had started on the P/G report two weeks before the October 2013 meeting because the Chairman had said that he wished the H/L report presented on its own in the absence of agreement. The October 2013 LAG meeting had been informed of this at that time.

2.8. It was suggested that assimilating the detail of the two risk assessments, each in excess of 100 pages, was a daunting and probably impractical task for the representatives of the main group, and that given the apparent similarity in conclusions it would be helpful to the group for the PERASG to produce a consensus report, focusing on the areas of agreement but identifying points of material disagreement as well as the main knowledge gaps.

Action Point 9.1: PERASG to produce a consensus set of conclusions based on the wildlife risk assessment minority reports

2.9. It was asked how the members of LAG could be aided in judging the soundness of information sources in light of the requirement for peer review which was acknowledged as being not infallible. The Chairman clarified that all the sources underpinning the risk assessments had to be clearly referenced and “capable of peer review” i.e. accessible to anybody with a critical interest; thus reducing the risk of information being accepted uncritically.

2.10. The extent was discussed to which population trends were a suitable way to assess risks to wildlife. It was accepted that the ideal would be to estimate differences in trends with and without effects of lead. It was also accepted that effects of lead on mortality rates and reproduction were population-level effects, even though they might not necessarily lead to effects on population trend. It was pointed out that population-level effects took no account of welfare impacts. Both risk assessments already identify possible population-level effects as opposed to trends as well as welfare impacts, but no conclusion was reached on this point.

2.11. There was discussion over which UK species populations are currently affected by lead. It was generally agreed that none could be identified, except probably for waterfowl (as noted in both risk assessments), but that often this was due to a lack of evidence, rather than evidence of no

effect. However, both risk assessments identify that population-level effects on mortality rates have been identified, albeit in non-UK species.

2.12. A major difference in the amount of lead gunshot deposited annually was identified between the two risk assessments with one suggesting 5,000+ tonnes and the other 5,000 – 17,000 tonnes. The gun trade representative provided his opinion on the quantities namely:

- Approximately 5,100 tonnes of lead shot is deposited annually from approximately 170 million cartridges
- Approximately 68 million cartridges are used for game and 102 million for clay shooting
- He disagreed with the estimated cartridge to kill ratio (of up to 13 shots to 1 bird) and suggested a figure of 4:1 was more realistic
- It was demonstrated that 600 pellets per cartridge was unrealistic, and that 200-400 was more likely, depending on the use (game vs clay)
- The use of a 32g cartridge was felt to be an overestimate, with 30g loads being more typical and closer to the average for all gauges (.410" through to 10 bore).

[post-meeting note: John Batley has subsequently provided an email regarding the figures quoted above]

2.13. It was asked why whooper swans appeared to be more susceptible to ingestion of lead shot than other species. It was suggested that this might be due to differences in feeding environment (agricultural fields) and habits (grazing and grubbing).

2.14. It was asked why non-avian species appear to be less susceptible to poisoning from lead shot ingestion than avian species. It was suggested that this might be due to differences in susceptibility or differences in feeding habits, but that there were insufficient studies to be sure.

2.15. It was noted that, of the three raptor/scavenging bird species around the world that have quantitative estimates of the effect on population trend of lead ammunition (Steller's sea eagle in Japan, white-tailed sea eagle in Germany and Californian condor in the USA), the UK has one of these species (white-tailed sea eagle) – although there is currently no evidence of ingested lead poisoning in England/UK. It was asked if it would be appropriate to use the German white-tailed sea eagle assessment for UK, but it was suggested that insufficient numbers of UK sea eagles were tagged to make it possible

2.16. It was identified that raptors were a common receptor species in most pathways identified by both risk assessments. However, there was discussion over the paucity of data on lead poisoning of raptors (only two studies). Both of the studies to date in the UK have relied on found-dead birds being sent in for analysis. It was noted that although found-dead raptors are autopsied they are no longer routinely checked for lead poisoning and tissue samples are not kept for future analysis (due to funding constraints). Furthermore, it was felt that because the two studies rely on found-

dead birds, that raptors likely to be exposed to lead ammunition poisoning (buzzards were suggested as an example) were likely to be underreported due to them not occupying areas widely used by the public. This was however disputed especially with regard to buzzards.

[John Harradine left the meeting]

3. To receive LAG stakeholder comments on the accepted risk assessments

3.1. There was discussion about the levels of game consumption across the wider population and how this linked to the levels of risk as identified in the human health risk assessment. It was suggested that there are three main risk levels, linked to levels of consumption might be characterised as:

- No risk. For the majority of the population who never eat game meat and so are never exposed to lead ammunition in game meat
- Trivial risk. For the majority of game consumers who infrequently eat game meat and so are infrequently exposed to ammunition lead in game meat
- Non-trivial risk. For a minority who regularly eat game meat and so are more frequently exposed to ammunition lead in game meat.

It was clarified that this is, in fact, a continuum. However, there was general agreement with the principle that there was a wide range of exposure and a large proportion of the UK population was exposed to little or no ammunition-derived lead.

3.2. There was discussion about contextualising the risks identified in the various risk assessments (for example, where does a non-trivial risk sit in a spectrum of risks such as drinking wine and eating fatty foods etc). It was pointed out the Terms of Reference of the PERASG had not asked for this to be done.

3.3. A question was raised over the accuracy of the consumption data used in the human health risk assessment, with some stating that the sources used were insufficiently robust (especially the BASC game meat survey). It was also made clear that a significant proportion of the venison eaten in the UK is either imported from New Zealand or sourced from deer farms. This could have a significant impact on the likely levels of lead in the carcasses, especially with regard to farmed deer. However, it was noted the estimates in the human health risk assessment refers specifically to wild-killed game and not to farmed game.

3.4. There was discussion over the portion sizes used in the human health risk assessment. A portion of 200g had been used for adults, in accordance with EFSA (2010). However, the FSA assumed a 100 g portion size, whilst the mean weight of unprocessed gamebird per serving in published recipes was 500 g per person. It was acknowledged that there were no sound empirical data on game meat portion sizes and so all the proposed portion sizes used by various authors

were approximate and a matter of opinion. However, it was noted that the human health risk assessment gives all its results in terms of both numbers of meals and the total weight of game meat consumed so that evaluation could be made using any portion size a reader might wish to assume.

3.5. Some concern was raised over the prominence of the risks to SATs performance in the human health risk assessment.

3.7. There were no substantive comments on the “livestock” risk assessment. However, there was clarification that the lack of evidence for any potentially significant risk could not currently be taken to indicate evidence of no risk.

3.8. A recent paper was identified which could be useful for the livestock risk assessment.

Action Point 9.2: Circulate AHVLA paper on risks to livestock from feeding in areas surrounding clay shooting ground to members of PERASG.

[Rhys Green left the meeting]

4. To decide next steps regarding the wildlife risk assessments

4.1. With regard to point 2.8 (above) it was agreed that the PERASG would produce a set of consensus conclusions (see action point 9.1).

4.2. It was agreed that the authors would produce final copies of the risk assessments for eventual publication.

Action Point 9.3: PERASG to finalise the wildlife risk assessments.

4.3. The need to send the wildlife risk assessments for external peer-review was discussed. It was stated that further internal review was needed first. It was suggested that Defra be commissioned to review the reports but this was dismissed because Defra had set up the group to offer independent advice to ministers, and Defra was keen not to jeopardise the independence by giving the appearance of steering the risk assessments.

Action Point 9.4: All to think of two possible external reviewers for the wildlife risk assessments if that is decided as a necessary step to take.

4.4. Both risk assessments identified a continuing risk to wildfowl from the ingestion of lead shot. It was agreed that more should be done to enforce the current bans on the use of lead shot for shooting all species of wildfowl (England/Wales) and for use over prohibited sites and wetlands (all UK countries).

5. To discuss views and suggestions concerning needs and options for additional measures to reduce risks to human health

5.1. The current quality control measures in place were briefly outlined to the group:

- Trained hunter qualifications
- Approved game meat handling establishment regulations
- Rigorous standards by supermarkets
- Purchasing procedures by butchers

It was then suggested that the supply of game meat outside of these established channels that could present a particular risk

5.2. It was broadly agreed that there was a need for advice for some game consumers, particularly children and expecting mothers and frequent consumers of game. It was suggested that industry codes of practice could be a way to address this, but that it would be important to look at existing recommendations, such as those recently announced by the FSA, and see if any additional recommendations were required. It was noted that the human health risk assessment conclusions broadly agree with the recommendations already released by the FSA.

6. To discuss views and decide how best to address any emerging risks whether for human health or wildlife

6.1. A discussion was had over whether a new subgroup should be established to discuss the identified risks. The group felt that speed was now important and that setting up a new subgroup would unnecessarily complicate and slow down the process. It was felt that the members of LAG were already well informed and best placed to complete the process.

6.2. A view was expressed that it may be necessary to bring in additional experts to address the results from any management issues identified (for example, legal experts to discuss any ramifications for need to change any laws). This was broadly disagreed with as although it is LAG's responsibility to produce recommendations, it is up to Defra and the FSA to decide on statutory measures.

6.3. The group was reminded that it should focus on identifying options for significant risks. However, it was noted that "significant" will vary among the stakeholder groups. Furthermore, the group was urged to consider timescales and costs and what actions could be taken now to prevent relatively current risks and mitigation costs increasing in the future.

7. To discuss the information gaps identified in the risk assessments

7.1. To be carried forward to the next meeting.

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

8.1. The decision to suspend the publication of the risk assessments was upheld. It will be reviewed once recommendations to ministers have been produced.

9. To discuss key issues arising from the LAG terms of reference for the next report to ministers

9.1. To be carried forward to the next meeting.

10. Any other business

10.1. FSA updated the group on the EU's progress on lead levels in food. The EU has requested all member states to produce guidance on consuming food containing lead (which the UK has already addressed), and has suggested it may bring in a maximum acceptable level in game meat. The FSA is opposed to this.

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 three risk assessments have been accepted by the LAG. The chairman of PERASG requested that Matt Ellis should be invited to undertake this task.

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

Carried forward

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

Action Point 9.2: Circulate AHVLA paper on risks to livestock from feeding in areas surrounding clay shooting ground to members of PERASG

Action Point 9.3: PERASG to finalise the wildlife risk assessments

Action Point 9.4: All to think of two suitable external reviewers for the wildlife risk assessments.

Date of the next meeting

12.1. The next meeting will be held on 24 February 2014. WWT have offered to host the meeting at Slimbridge.