Approaching a tipping point for transition to non-toxic ammunition?

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John Swift Consultancy, UK
• The problem of lead poisoning
• The solution
• How to get there? Persuasion? Policy?
  – Barriers
• The future and the tipping point
Exposure route 1: Direct ingestion of spent shot from the environment
Europe:
~1 million deaths of 17 wildfowl species annually
Exposure route 2: Ingestion shot and bullets from shot prey or carrion
• Lethal and sub-lethal – proportions of deaths range from 3% to 35%

• Population level impacts for some e.g. Californian Condor, Steller’s Sea Eagle, White-tailed Eagle

E.g. European white-tailed eagles – 14-28% deaths
Also risk to human health: frequent consumers, pregnant women and children
there is no safe level of lead exposure.
IQ scores dropped by about six points.
Lead ammunition
One Health
What does it take to tackle a pollutant?

- Microbeads

*Plastic microbeads to be banned by 2017, UK government pledges*

The UK government has announced plans to ban microbeads used in cosmetics and cleaning products by 2017.

The small pieces of plastic commonly found in toothpaste, exfoliating body scrubs and other household products and are thought to damage the environment.
Late lessons from early warnings: science, precaution, innovation

Summary

Late lessons from early warnings:
lessons learned from removing lead in petrol

Lead in petrol industry 1960s-70s responses

✓ Denial of the issue

✓ Challenging the science – and the individuals involved

✓ Studies in other countries ‘not relevant’

✓ Ultimately accepting science but denying its impacts

✓ Resisting change as alternatives ‘not good enough’

✓ Once change inevitable, rapid acceptance and denial that there was any problem
Late lessons from early warnings: Lead ammunition?

- Mid 1800s – lead poisoning in birds first diagnosed
- 1950s onwards - majority of studies
- 1980s onwards - extent of wildlife impacts better understood
- 2000s - risks to human health appreciated: Widely recognised as One Health issue (Peregrine Fund conference 2008)
Lead ammunition used by wide range of stakeholders

• What are the mitigation options?
  – Not use in high risk areas
  – ‘Collect’ spent shot
  – Shoot better so don’t cripple/prick birds
  – ‘Remove’ all carcasses with lead bullet fragments
  – Throw away contaminated meat

Range of residual risks

  – Use non-toxic ammunition
Non-toxic ammunition mitigates risks

<table>
<thead>
<tr>
<th>OPTION</th>
<th>MITIGATION IE RISK REDUCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Humans</td>
</tr>
<tr>
<td>Prohibit the use of lead shot for shooting all live quarry</td>
<td>3</td>
</tr>
<tr>
<td>Prohibit the use of lead shot for all shooting (inc clays and live quarry)</td>
<td>3</td>
</tr>
<tr>
<td>Prohibit the use of all lead ammunition (shot and bullets)</td>
<td>4</td>
</tr>
<tr>
<td>Enforce compliance with existing regulations by increasing enforcement activities</td>
<td>0</td>
</tr>
<tr>
<td>Remove legacy lead from clay shooting grounds</td>
<td>0</td>
</tr>
<tr>
<td>Capture all new lead deposits on clay shooting grounds</td>
<td>0</td>
</tr>
<tr>
<td>Compulsory labelling of food containing lead shot</td>
<td>2</td>
</tr>
<tr>
<td>Ban on the sale of all game meat containing lead shot</td>
<td>4</td>
</tr>
<tr>
<td>Maximum tissue lead residue level for game meat</td>
<td>3</td>
</tr>
<tr>
<td>Enhanced meat handling training as part of Trained Hunter qualification</td>
<td>2</td>
</tr>
<tr>
<td>Reissue FSA game consumption advice</td>
<td>1</td>
</tr>
</tbody>
</table>
## Current cost areas

<table>
<thead>
<tr>
<th>Stakeholder/cost owner</th>
<th>Lead</th>
<th>Non-toxic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual animals</td>
<td>Welfare, morbidity, mortality</td>
<td></td>
</tr>
<tr>
<td>Populations</td>
<td>Decline/negative impacts</td>
<td></td>
</tr>
<tr>
<td>Conservation community</td>
<td>Surveillance &amp; research</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Conservation actions</td>
<td></td>
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<tr>
<td></td>
<td>Advocacy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Policy</td>
<td></td>
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<tr>
<td>Scientists</td>
<td>Research</td>
<td></td>
</tr>
<tr>
<td>Animal rescue centres</td>
<td>Treating</td>
<td></td>
</tr>
<tr>
<td>Wider society</td>
<td>Loss of natural capital</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Contaminated soils</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Health impacts</td>
<td></td>
</tr>
<tr>
<td>Shooters</td>
<td>Health impacts</td>
<td>Training</td>
</tr>
<tr>
<td></td>
<td>Wasting meat</td>
<td>Proofing guns/new guns?</td>
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<tr>
<td></td>
<td></td>
<td>Expensive ammunition - some</td>
</tr>
<tr>
<td>Gun &amp; ammo manufacturers</td>
<td></td>
<td>R&amp;D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>??</td>
</tr>
<tr>
<td>Policy</td>
<td>Regulation/enforcement</td>
<td>Regulation/enforcement</td>
</tr>
</tbody>
</table>
## Benefits of non-toxic future

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Non-toxic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual animals</td>
<td>Not poisoned</td>
</tr>
<tr>
<td>Populations</td>
<td>Removal of limiting factor?</td>
</tr>
<tr>
<td>Conservation community</td>
<td>Resources for other issues</td>
</tr>
<tr>
<td>Scientists</td>
<td>Resources for other issues</td>
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<tr>
<td>Animal rescue centres</td>
<td>Resources for other issues</td>
</tr>
<tr>
<td>Wider society</td>
<td>Ecosystem services</td>
</tr>
<tr>
<td></td>
<td>Clean soils</td>
</tr>
<tr>
<td></td>
<td>Healthy meat</td>
</tr>
<tr>
<td>Shooters</td>
<td>Reduction in reputational risks</td>
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<tr>
<td></td>
<td>Promote shooting as sustainable</td>
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<tr>
<td></td>
<td>Promote game as healthy</td>
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<tr>
<td></td>
<td>Less conflict with conservation bodies</td>
</tr>
<tr>
<td></td>
<td>More birds to shoot?</td>
</tr>
<tr>
<td>Gun &amp; ammo manufacturers</td>
<td>New product lines and sales of guns?</td>
</tr>
<tr>
<td>Policy</td>
<td>Resources for other issues</td>
</tr>
</tbody>
</table>
Can we make the transition to non-toxic ammunition?

Behaviour change:

Complex and dependent on personal values and beliefs, and those of peers – which may be rooted in culture, tradition and societal norms.

Persuasion vs. policy

Persuasion vs. policy
1. Persuasion?

• Persuasion that there is a problem that needs a solution (awareness is starting point)

• Taking ownership of the problem

• Persuasion that there is a suitable solution

• Open mindedness to overcome the practicalities of change

• Leadership/confidence to ‘break rank’

• Persuasion just to do it for wider benefits

...or lose it altogether
Understanding potential for persuasion

Noting previous voluntary restrictions have failed

Exploring UK stakeholder views and influences by different methods:

1. Q method
2. Questionnaire survey
3. Shooting media content analysis
A quantitative approach using Q-method to understand perspectives/barriers/alignments for solutions and facilitate dialogue

- Developed by psychologist William Stephenson (1935)
- Increasingly used in sustainability and resource management (Curry et al. 2013)

- Identify stakeholders
- Develop conflict narrative
- Extract opinion statements
- Q-sort and interview
- Quantitative factor analysis
- Interpretation of results
Questionnaire survey reveals current barriers to persuasion
Survey of BASC members (Cromie et al. 2010)

1. ‘Lead poisoning isn’t a problem’

Duck virus enteritis...
Avian botulism
Lead poisoning
THESE migratory wigeon stand more chance of being kicked to death by a chicken than they do dying from lead shot ingestion.
1. ‘Lead poisoning isn’t a problem’
2. ‘Not going to get caught’

Barriers to persuasion
Barriers to persuasion

1. 'Lead poisoning isn’t a problem'
2. 'Not going to get caught'
3. 'Don’t like alternatives'

With reference to Robin Scott’s article “Parting Shots” commenting on Jeffrey Olstead’s article concerning lead shot poisoning, I wrote to Wildfowl and Wetlands Trust and asked them to comment on assertions on their web site that 8.7 per cent of wildfowl in Europe (out of a population of 17 species) might die each year from lead poisoning during winter. I thought you would be interested in their reply which I think makes for worrying reading.

The link to Mateo’s peer reviewed publication is worth following as it goes into great detail and whilst I am not able to understand a lot of what it says, I think the tables showing lead shot in wetlands is revealing and potentially very damaging.

If 8.7 per cent of the 17 species of wildfowl die each year then this amounts to nearly one million birds. I have used steel and bismuth shot in the past, but never felt entirely happy with the results, but surely it must be possible to come up with an alternative to lead that won’t result in the death of any birds apart from those destined for our cooking pots?

I think it’s time the shooting fraternity got ahead of the game and stopped playing catch up.

Philip Terry, Caterham, Surrey.

ROBIN SAYS: Statistics are all very well, but they can often be misleading. Nobody doubts that lead has the ability to cause death among duck but don’t forget either that millions more die annually of other causes too. These include mass die-outs due to botulism poisoning – outbreaks of which can also affect WWT reserves.

Yes, there are better alternatives to steel and bismuth but who among us can afford shotgun pellets made from gold or platinum?

...who among us can afford shotgun pellets made from gold or platinum?
Barriers to persuasion

Proposed

4. Tradition

Unpicking tradition complex but...

- Unacceptable to society

- (Societal) benefits clearly outweigh costs

Homo creatureofhabitus
Barriers to persuasion

Proposed

4. Tradition

5. Polarised loyalties \textit{(the message is irrelevant as messenger becomes the problem)}
Barriers to persuasion

Proposed

4. Tradition
5. Polarised loyalties
6. Challenging the wealthy/powerful/big business
Lead is a convenient scapegoat in an attack on shooting sports.

The Case For LEAD

Give your voice to keep lead

UK shooters unite against lead threat

WWT takes short-cut to avoid scrutiny

Lead shot scare is based on bad science

The Weasel Words Trust?

Jetley says the Wildfowl and Wetlands Trust is trying to pull the wool over the eyes of the public and stake up shooters on the lead shot issue.
Influence of the shooting media in persuasion?

88% of opinions resist change

Figure 2: Opinions relating to lead ammunition cited in 72 articles in the printed shooting media between July 2010 and July 2015. Blue bars represent opinions which likely resist change or resist acceptance of a problem, orange bars acknowledge a problem. The pie chart summarises these opposing sets of opinions. *Further evidence is required before a change in approach to lead ammunition can be considered.
1. Persuasion?

- Persuasion that there is a problem that needs a solution (awareness is starting point)
- Taking ownership of the problem
- Persuasion that there is a suitable solution
- Open mindedness to overcome the practicalities of change
- **Leadership/confidence to ‘break rank’**
- Persuasion just to do it for wider benefits
Leadership

Lead Ammunition Group: 5 year stakeholder process for UK government
(Defra and Food Standards Agency)

- Chair’s Ex-CEO of BASC

- Report essentially recommends replacement of lead ammunition with non-toxics ‘no longer the shooter’s friend’
Denmark

*complete transition to non-toxic shot in 1996*

1. Leadership from within
2. Charismatic leader
3. Broad minded culture
4. 'Flatter' less hierarchical society
5. Not British...
6. *Progressive government – but persuasion was key*
“Never doubt that a small group of thoughtful, committed individuals can change the world; indeed it’s the only thing that ever has.”

-Margaret Mead
Can we make the transition to non-toxic ammunition?

Persuasion vs. policy
Policy
Multilateral environmental agreements

African-Eurasian Waterbird Agreement – wetland focus


1999 Resolution 1.14 - deadline 2000

2002 Resolution 2.2 – own published timetables

2008 Strategic Plan – deadline 2017

2012 Resolution 5.23 – deadline 2017
2011 Resolution 10.26

Establishes Preventing Poisoning Working Group
2014 – Resolution 11.15

Time for Action!
COP11
4-9 Nov 2014
Quito, Ecuador
Adopted!

Adoption of guidance on addressing sources of bird poisoning

“Phase-out the use of lead ammunition across all habitats”
• Draft resolution 12.X – formally establish a **Lead Task Force**
  – Key stakeholder group to facilitate sharing experiences and develop initiatives
090 - A path forward to address concerns over the use of lead ammunition in hunting

NOTING that lead can be both an acute and chronic poison of all vertebrates resulting in both direct and indirect mortality, and morbidity;

FURTHER NOTING that lead ammunition ingestion either directly from the environment, or from prey, can cause avoidable suffering and mortality affecting some species' population status (as seen in some wildfowl, raptor and scavenger species);

RECOGNISING that wildlife management decision making should be based on ensuring self-sustaining wildlife populations;
Adopted!

Reinforces CMS resolution and going further:

- Non-CMS parties
- ~750 IUCN members organisations
- IUCN DG and Commissions go non-toxic in high risk areas
Current important policy initiative

• 2017 European Chemicals Agency (ECHA) – restriction proposal for wetlands

• Wider restriction to follow?
National Policy

- Socio-economics
- Evidence
- Public opinion
- Politics

Government decision makers

- Policy
June 2015
Submission of Lead Ammunition
Group report to UK government

- Chair’s report essentially recommends *replacement of lead ammunition with non-toxics*
13th July 2016 Defra responds to LAG report

Minster says no real changes needed
BREAKING: INTERIOR SECRETARY RYAN ZINKE OVERTURNS OBAMA BAN ON LEAD AMMO
Late lessons from early warnings: lessons learned from removing lead in petrol

Lead in petrol industry 1960s-70s responses

- Denial of the issue
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- Studies in other countries ‘not relevant’
- Ultimately accepting science but denying its impacts
- Resisting change as alternatives ‘not good enough’
- Once change inevitable, rapid acceptance and denial that there was any problem

UK shooting industry similar with discrediting of:

- Science
- Scientists
- Protagonists
- Processes

But there has been definite shift...
Direction of travel

• This is an issue heading in one direction
• There will be
  – more evidence
  – more policy and other related initiatives
  – more reputational risks
  – more chance that this becomes anti-shooting
  – more persuasion – by the right messengers
  – more shared experience of the non-toxics which will normalise their use
Who is most open to persuasion?

- NGO natural resource managers
- ‘Concerned’ shooters
- Wildfowlers
- Govt. natural resource managers
- ‘Sustainable lifestyle’ users
- Deer/boar hunters etc.
- Terrestrial bird shooters
- Gun & ammo industries
- Gamekeepers
Govt. natural resource managers
- Deer/boar hunters etc.
- Terrestrial bird shooters
- Gun & ammo industries
- Gamekeepers

NGO natural resource managers
- Wildfowlers
- Non-toxic

Lead
Govt. natural resource managers

Deer/boar hunters etc.
Terrestrial bird shooters
Gun & ammo industries
Gamekeepers

‘Concerned’ shooters
NGO natural resource managers
Wildfowlers

Lead
Non-toxic

Non-toxic
Govt. natural resource managers
Deer/boar hunters etc.
NGO natural resource managers
Wildfowlers
Terrestrial bird shooters
Gun & ammo industries
Gamekeepers

Lead

'Sustainable lifestyle' users
'Concerned' shooters
NGO natural resource managers
Wildfowlers

Non-toxic
More and more policy

- Terrestrial bird shooters
- Gun & ammo industries
- Gamekeepers
- Deer/boar hunters etc.
- ‘Sustainable lifestyle’ users
- Govt. natural resource managers
- ‘Concerned’ shooters
- NGO natural resource managers
- Wildfowlers
- Non-toxic

Lead

It will be a shame if persuasion fails.
Conclusions

1. Facts alone do not result in policy or change minds

2. Natural science key for evidence base - merely a starting point and worth little in the real world without fully appreciating - complexities of people - politics and understanding where power lies

3. Not enough persuasion - *from the right persuaders*

4. Policy is essential – and will happen - but easier if the stakeholders are receptive

5. We are approaching the tipping point!
Request of IUGB participants

- Are we missing key points?
- Are you in a position to persuade or promote non-toxics?
- Advice on key advocacy tools?
- Advice on key advocates and focus?
Thank you for your attention.