



# Lead in Ammunition: Perspectives from the European hunting community

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# FACE MEMBERS' MEETING

9-11 APRIL 2019

 nederlandse

**Jagers**  
vereniging



# How a presentation can facilitate:

- The technical and scientific discussion on the issue of lead in hunting and shooting that will also serve as input into the investigation that ECHA is currently carrying out.
- What is currently known about lead.
- A summary of the facts and evidence.



# Policy context:



IUCN  
World  
Conservation  
Congress  
Hawai'i 2016

- **AEWA:** In 1995 called on Parties to “... *endeavour to phase out the use of lead shot for hunting in wetlands by the year 2000.*”
  - **23 EU Member States did this**
- **CMS:** The Conference of Parties in 2014 called on all Parties to “*Phase-out the use of lead ammunition across all habitats (wetland and terrestrial) ...*” Resolution 11.15 - *agreeing that it is for each Party to determine whether or how to implement the recommended actions, considering the extent and type of poisoning risk*
- **IUCN:** A path forward to address concerns over the use of lead ammunition in hunting (WCC-2016-Res-082-EN)

# EU laws on lead in ammunition

- Wetlands (24 Member States)
- Lead shot bans:
  - DK
  - BE (Flanders)
  - NL
- Lead rifle bullet bans:
  - Parts of DE (rifle bullets)
  - IT (Alps) – nat. park site





## Lead

Regulatory process names 3 IUPAC names 9 Trade names 23 Other identifiers 4 ↓Groups:

**Substance identity**

**EC / List no.:** 231-100-4

**CAS no.:** 7439-92-1

**Mol. formula:** Pb

Pb

**Hazard classification & labelling** 

*Danger!* According to the classification provided by companies to ECHA in **REACH registrations** this substance may damage fertility or the unborn child, causes damage to organs through prolonged or repeated exposure, is very toxic to aquatic life with long lasting effects, may cause cancer, is very toxic to aquatic life and may cause harm to breast-fed children.

**Properties of concern** 

A majority of data submitters agree this substance is Carcinogenic



Toxic to Reproduction

**Important to know**

## ECHA identifies risks to terrestrial environment from lead ammunition

ECHA/PR/18/14

**The European Chemicals Agency (ECHA) recommends that measures are needed to regulate the use of lead ammunition in terrestrial environments in addition to those proposed for wetlands.**

# Quantity / usage of ammunition (ECHA)

- It is estimated that **around 21 – 27 000 tonnes of lead** is dispersed into the EU environment per year from these uses.
- An estimated **14 000 tonnes of lead shot** is dispersed into terrestrial areas in the EU each year.
- It is estimated that sports shooters in the EU use around **10 000 to 20 000 tonnes** of lead in shot cartridges per year on shooting grounds.

# Understanding use of lead ammunition for hunting in Europe

- Evidence on national situations including the scale of hunting and shooting in different countries (number of hunters, main types of hunting, sports shooting, etc.) is required.
- Generally, for shotgun shooting, we understand that over 65% of shot is used for clay shooting at shooting grounds in Europe, but in some countries this percentage is over 85% for clay shooting.
- It would be important to estimate what percentage/use is for certain uses or types of sports shooting/hunting e.g. air rifles, target shooting ranges, clay shooting, rifle ranges.
- It would also be useful to ascertain what calibres are in use for hunting and target shooting purposes...



• 22lr	• 7 × 64	7mm Weatherby Magnum	9,3x57
• 17 HMR	• 7 × 65 R	.280 Remington	9,3x57R
• 22 WMR	• 7 mm REM. MAG.	7,5x55 Swiss	9,3x62
• 17 HORNET	• 303 BRITISH	.308 Norma Magnum	9,3x64
• 204 RUGER	• 30 CARBINE	.300 Winchester Magnum	9,3x72R
• 22 HORNET	• 30-30 WIN.	.30 R Blaser	9,3x74R
• 222 REM.	• 308 WIN.	.300 Weatherby Magnum	.400/.375 Holland & Holland
• 223 REM.	• 30-06 SPRING.	.300 Holland & Holland Magnum	.375 Holland & Holland Magnum
• 22-250 REM.	• 300 WIN. MAG.	8x56 Mannlicher-Schönauer	.378 Weatherby Magnum
• 5,6 × 50 R MAGNUM	• 8 × 57 JR	8x60R	.450/.400 Magnum Nitro Express
• 5,6 × 52 R	• 8 × 57 JRS	8x60S	3 _ "
• 243 WIN.	• 8 × 57 JS	8x64	.416 Rigby
• 6,5 × 52 R	• 8 × 64 S	8x64S	.416 Remington Magnum
• 6,5 × 55 SE	• 338 LAPUA MAG.	8x65R	.416 Weatherby Magnum
• 6,5 × 57	• 9,3 × 62	8x65RS	.404 Rimless Nitro Express
• 6,5 × 57 R	• 9,3 × 72 R	8x68S	.45-70 Government
• 6,5 CREEDMOOR	• 9,3 × 74 R	.338 Winchester Magnum	.500/.450 No 1 Express
• .257 Wealth Mag	• 45-70 GOVT.	.338 Lapua Magnum	.450 Nitro Express 3 _ "
• 270 WIN.	.220 Swift	.340 Weatherby Magnum	.450 No 2 Nitro Express 3 _ "
• 7 × 57	6 mm Norma BR	.350 Rimless Rigby Magnum	.458 Winchester Magnum
• 7 × 57 R	.25-06 Remington	9x57	.460 Weatherby Magnum
	.256 Mannlicher-Schönauer	9x57R	.500/.465 Nitro Express
	.257 Roberts	.35 Wheelen	.470 Nitro Express
	.270 Weatherby Magnum	.358 Norma Magnum	.475 No 2 Nitro Express
	7mm-08 Remington	.400/.360 Nitro Express	.500 Jeffrey Rimless

# Quantity/usage of ammunition: Game bags

- It was estimated that 6 million waterfowl are shot annually (AMEC, 2012).
- Hirschfeld and Heyd (2005) work is outdated and often considered problematic, which estimated that the total amount of birds shot annually in Europe is about 101 million.
- More information about harvest data for bird hunting will soon become available during the EU reporting process under the Birds Directive (Article 12) – 2020.

# Jahresjagdstrecke Bundesrepublik Deutschland



Wildart	Jagdjahr 2017/18 Stück	Jagdjahr 2016/17 Stück	gegenüber Vorjahr Stück	gegenüber Vorjahr %
Wildgänse	95 394	94 331	1 063	1,13%
Wildenten <sup>1)</sup>	273 832	317 843	-44 011	-13,85%
Wildtauben	431 047	453 913	-22 866	-5,04%
Füchse	426 224	435 700	-9 476	-2,17%
Dachse	75 000	69 257	5 743	8,29%
Baumarder	6 595	6 038	557	9,22%
Steinmarder	52 191	43 562	8 629	19,81%
Iltisse	8 461	9 328	-867	-9,29%
Wiesel	4 069	4 019	50	1,24%
Waschbären	172 549	134 098	38 451	28,67%
Marderhunde	31 245	30 272	973	3,21%
Waldschnepfen	8 570	7 829	741	9,46%

# Risk

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- **Environment:**

- Waterbirds/wetlands
- Terrestrial

- **Human health:**

- Risk management?

vs.

- *No safe limit... non threshold substance...*



# Environmental risks: Risk management?

## RISK MANAGEMENT OPTIONS: LEAD SHOT

- Adoption of (and compliance with) restrictions on lead shot over wetlands.
- Adoption of proactive information, awareness-raising and best practice campaigns.
- Continued monitoring of both compliance and effect on individual species and populations.
- Using non-lead shot to eliminate risks.

## RISK MANAGEMENT OPTIONS: BULLETS

- Do not leave gut piles in the field: It is recommended that when field dressing game shot with lead ammunition, the diaphragm is left intact, and that the heart and lungs are disposed of at home, and not fed to pets or left where wild animals can eat them.
- Using non-lead bullets to eliminate risks: Non-lead bullets eliminate any risks to birds from lead in discarded gut piles.

## **WCC-2016-Res-082-EN**

### **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;

ALSO RECALLING that evidence of lead poisoning from ammunition has been recorded in at least 20 countries, although there is some potential for lead poisoning to occur wherever lead ammunition is used for shooting;

**CONCERNED that the consumption of lead shot game can present a risk to human health (especially to children, pregnant women and subsistence hunters);**

# Advice from several national food safety agencies



## NATIONAL ADVICE

Many national food agencies have issued advice to people who frequently eat game. The following national agencies have issued advice:

- UK – FSA advice: <https://www.food.gov.uk/science/advice-to-frequent-eaters-of-game-shot-with-lead>
- Sweden: National Food Agency, Sweden: <https://www.livsmedelsverket.se/produktion-handel-kontroll/produktion-av-livsmedel/jakt#Bly%20i%20viltk%C3%B6tt>
- Spain: Scientific Committee of the Spanish Agency for Food Safety and Nutrition Safety
- Germany: Federal Institute for Risk Assessment, Germany
- Norway: Norwegian Food Safety Authority: [http://www.matportalen.no/matvaregrupper/tema/fjorfe\\_og\\_kjott/unngaa\\_kjott\\_rundt\\_saarkanalen\\_fra\\_hjortevilt\\_felt\\_med\\_blyammunisjon](http://www.matportalen.no/matvaregrupper/tema/fjorfe_og_kjott/unngaa_kjott_rundt_saarkanalen_fra_hjortevilt_felt_med_blyammunisjon)
- Italy – ISPRA advice: <http://www.isprambiente.gov.it/en/publications>

## RISK MANAGEMENT OPTIONS

### Remove meat affected by lead:

Follow the Swedish advice on game meat handling to trim away the majority of lead contaminated game meat:

- For game shot with **bullets**, remove the wound channel, defined as any meat that is visibly affected by the bullet (or bloodshot), and an additional 10cm of meat visibly unaffected by the bullet.
- For game taken with **shot**, remove any meat that is visibly affected, bruised or bloodshot. Remove any visible shot from the meat and cut away any damaged meat and gunshot holes. This is demonstrated here with pheasants:

[https://www.youtube.com/watch?v=vH\\_roSYGNC8](https://www.youtube.com/watch?v=vH_roSYGNC8)

- All removed meat should be discarded and should not be used for human or animal consumption.

### Consumption:

- If you follow the advice above, you do not need not limit consumption of game meat. Otherwise:
  - Frequent consumers of game shot with lead ammunition should consider reducing the amount they eat, discarding the affected meat, or switching to non-lead ammunition.
  - Women who are pregnant or planning to get pregnant and children <7 years should avoid lead-contaminated meat.



## ▼ What are the health risks to humans?

Exposure to lead is associated with a wide range of negative health effects, including reduced fertility, developmental effects in babies and children, damage to organs through prolonged or repeated exposure and cancer. Lead is especially detrimental to children's neurological development. Current evidence suggests that there is no safe level of lead consumption.

Based on the risk of clinically important effects in infants, children and pregnant women, the European Food Safety Authority has previously ([EFSA 2010](#)) recommended that exposure to lead from both dietary and non-dietary sources should be reduced.

Recent research suggests that game shot with lead ammunition can contain microscopic fragments of lead, which cannot be removed during preparation. **The practice of 'cutting away' and discarding meat from around the wound channel, or removing embedded lead fragments, is not sufficient to remove all the lead present in the meat.**

Any reduction of dietary lead exposure will reduce the human health risks, particularly for children and adults who regularly eat game meat. Several food agencies in EU Member States advise citizens to consume game shot with lead in moderation, including the French Agency for Food, Environmental and Occupational Health and Safety ([ANSES](#)), who advise the general public not to consume game killed with lead ammunition more than three times per year, and for children and pregnant women not to consume game killed with lead at all.

There is no evidence that consuming fish caught with lead tackle will result in dietary exposure to lead. However, the practice of 'home-casting' lead-containing fishing tackle has recently gained popularity as a do-it-yourself activity among some fishers. If undertaken without the appropriate personal protective equipment or ventilation, it risks exposure to lead-containing fumes and dusts. Such activity may also result in a risk to other members of the household, for example due to insufficient ventilation or misplacement of the contaminated equipment.

# Information needs for a socio-economic assessment

- **Firearms for hunting:**
  - What types of firearms exist?
  - Are they suitable for non-lead ammunition?
- **What non-lead rifle ammunition exists?**
  - What of this is economically feasible and tested?
- **Main concerns if a restriction is decided:**
  - Lacking socio-economic information and a lack of engagement from governments.
  - How to deal with knowledge gaps?
  - Is it wise to examine non-lead ammunition too?

Would  
we lose  
hunters?

# Typical concerns raised by hunters

- The effectiveness of steel shot
- Impact of non-lead on firearms
- The human health issue
- Non-lead can be toxic too (environment and health)
- The risk of ricochets (safety)
- Limited availability of steel shot cartridges with bioplastic wads or fibre-wads
- Non-lead ammunition availability for rifle calibres (below 6mm) and for short/other firearms



Thank you

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