

BRIEFING APPRAISAL

of the

EUROPEAN CHEMICALS AGENCY (ECHA) ANNEX XV INVESTIGATION REPORT, 2018

‘A review of the available information on lead in shot used in terrestrial environments, in ammunition and in fishing tackle’

Version 1.4 of 27 November 2018

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for

European Fishing Tackle Trade Association

Preface

This appraisal document examines the information on fishing lead contained in the ECHA (2018) report. It is focussed on providing an informed assessment of the aspects of the report concerned with the possible impacts of angling lead on wildlife, including birds, and on water quality.

It does not attempt to assess potential impacts on human health, and no commentary is provided on any associated ethical or political issues.

1.0 General Comments

- 1.1 It is stated (page 5) that “*Lead-based fishing tackle is frequently lost during use*’. No evidence whatsoever is presented to support this claim. In the same paragraph, reference is made to ‘*dropping the lead*’, which is a minor, recent practice restricted to (or, at least, mostly applicable to) carp and barbel angling in the UK (see section 1.4 [below]).
- 1.2 The report contains repeated references to the COWI (2004) study document (*‘Advantages & Drawbacks Of Restricting The Marketing & Use Of Lead In Ammunition, Fishing Sinkers & Candle Wicks’*), prepared for the European Commission. However, the ECHA document makes no attempt to update the information in the COWI study, even though it states that ‘... *these data would be relatively straightforward to update using the same methodology as originally used*’.
- 1.3 The term used by ECHA to identify small, elongate, split shot (on page 76) is ‘*style*’, which is incorrect; it should be ‘*styl*’.

- 1.4 The ECHA report footnote (No. 64) on page 71 is a complete and direct quote from an environmental campaigner (Stuart McLanaghan) . The cited numbers of carp anglers that ‘dump’ leads and the total weight of those leads are complete guesses and not backed by any data. Moreover, no mention is made of the fact that such leads invariably exceed 2oz (56.7g) in weight. The scientific evidence is that this weight is double the maximum size that mute swans (*Cygnus olor*) could ingest and the maximum size that ‘common loons’ (*Gavia immer*, also known as great northern divers) would swallow.

2.0 Lead Volumes & Types

- 2.1 On page 64 of the ECHA report, it is stated: *‘The amount of lead used in fishing is estimated to be between 4000 and 15000 tonnes per year.’* In context, this statement is misleading because it relates to lead used in both angling and in commercial fishing.
- 2.2 The calculations contained on pages 69-70 for angling lead are based on the COWI report (2004), which made a *‘cautious estimate’* that the annual consumption in the (then) EU25 countries was 2000 – 6000 tonnes of lead used in angling. The COWI study could not quantify the relative proportions of anglers’ lead used in fresh water and in the marine environment. Nevertheless, the stated 50:50 split between marine and freshwater use was an assumption - as the authors admitted – but it may have been an inaccurate guess. The ECHA report merely repeats that unsubstantiated assumption.
- 2.3 Some of the figures presented on Table 13 (page 77) of the ECHA report are incorrect. They are those contained in the COWI (2004) report and show that the total costs to anglers per tonne of lead substituted is greater for phasing out lead sinkers for angling in inland waters (19,000 – 39,000€/t) than for a total phase-out of lead sinkers for (all) angling (12,000 – 34,500€/t).
- 2.4 On page 6, it is written that: *‘... the practice of ‘home casting’ of various types of lead-based fishing tackle for recreational anglers appears, based on the predominance of online retailers, to be widespread.’* No evidence is advanced to support this supposed ‘predominance’, and no mention is made of the fact that the ‘home casting’ that does take place is largely undertaken to create sea-fishing leads (which are too large to be ingested by mute swans and divers).
- 2.5 The estimates I obtained in 2004 from a major manufacturer of angling lead in the UK showed that sea-angling lead represented some 90.9% of annual sales.

3.0 Wildlife Impacts

3.1 Mute Swans

- 3.1.1 There was a specific problem in the UK and Ireland with the accidental, lethal poisoning of mute swans with angling lead ingested in mistake for grit and small stones, used to grind plant foods in the birds' gizzards. The issue was resolved by (i) prohibiting the use in fresh water of angling lead in the range 0.06g (No.6 shot) to 28.35g (1oz), in 1987, and (ii) the development and sale of a range of non-toxic, alternative weights.
- 3.1.2 In connection with mute swan poisoning with angling weights in the UK and Ireland, the ECHA report states (on pages 5 and 81): '*These risks are unlikely to be limited to these two Member States as these species and the use of lead fishing weights are ubiquitous throughout the EU.*' This is purely speculative: the report does not provide any evidence for mute swan poisoning anywhere other than in the UK and Ireland, and I have failed to discover any scientific literature or data that relates to other countries.
- 3.1.3 Furthermore, in the UK and Ireland there were specific angling techniques necessitating the attachment to the line of split lead shot before fishing commenced and the detachment of the shot from the line when fishing ceased. The shot 'hand-stripped' from the line was often discarded underarm into the fishery margins along with any unused bait, thereby creating an inadvertent and potentially fatal feeding area for mute swans. In contrast, much fishing for non-predatory species in mainland Europe is practised using reel-less 'poles', with short lengths of pre-weighted end tackle being attached to the end of the line and detached (and retained on smaller storage end-rig 'winders') when fishing ceases.

3.2 'Loons'/Great Northern Divers

- 3.2.1 There is a specific issue with North American 'loons' (divers) ingesting angling lead, with fatal consequences. It is claimed - correctly - that: '*The majority of other data on ingestion in other species (e.g. divers/loons) is from observations reported from studies in North America.*'
- 3.2.2 Many (in some studies, most) of the affected birds had swallowed lead 'jigheads', as well as angling sinkers. Some studies claim that loons require grit and stones for the same reason as mute swans, even though the birds are almost entirely piscivorous.

- 3.2.3 Recent research shows a strong correlation between seasonal angling activity and loon poisoning, suggesting that the birds are not consuming lost leads alone - or in significant numbers - but are swallowing live or dead fish that are attached to broken end tackle. The maximum lead sinker weights that are usually swallowed by the birds is about 2oz (56.7g), although most are less than half of that weight: the ECHA report states that: '*The loons most often ingested weights of ¼ - 1 ounce (28.345g)*'. A single bird was found with a 78.2g pyramid lead weight.
- 3.2.4 However, this ECHA statement is followed immediately by another highly speculative claim (pages 5, 71 and 81:): '*... the feeding behaviour and ecology of affected species of waterbirds can be expected to be similar in European populations; resulting in similar risks.*' (page 5:) '*To protect these European populations further regulatory action addressing the use of lead in fishing sinkers may be necessary.*' Again, no evidence is advanced for this claim and I have not discovered any evidence that any divers have died or are dying from angling lead anywhere in Europe.
- 3.2.5 This probably reflects the fact that when the divers migrate to north-western Europe in the autumn/winter period, they occupy coastal areas and large lakes, habitats in which the potentially dangerous sizes of angling lead sinkers and jig-heads will be used by very few, if any, anglers.

3.3 Bald/Sea Eagles

- 3.3.1 In Part III of the ECHA document (on page 64) the claim is made that: '*Eagles ingest lead by eating fish which have themselves swallowed sinkers.*' No evidence whatsoever is presented to justify this claim. It is much more likely – but also unproven – that the mechanism by which the single bald eagle, *Hasliaeetus leucocephalus* (see the table on page 69 of the ECHA report) ingested a sinker/jig was by swallowing a fish still attached to a sinker/jig e.g. when the hooked fish broke the fishing line.
- 3.3.2 Bald eagles are very closely related to sea eagles/white-tailed eagles (*Hasliaeetus albicilla*), a relatively rare species which is present in small numbers in many European countries. I have discovered no reported instances and poisoning of sea eagles in Europe because of the ingestion of angling lead.

3.4 European Birds & Other Wildlife

- 3.4.1 By its absence, there is no evidence of this phenomenon affecting (i) other water birds or other animals in the UK and Ireland, and (ii) any water birds or other animals in any other European country.

3.4.2 The ECHA report states (on page 75) that: '*... waterbirds at risk of ingestion of lead shots are migratory across the Union*'. To the best of my knowledge - and accordingly to the ornithological studies I have read – neither mute swans nor divers are migratory across European countries. There are four, largely sedentary communities of mute swans in Europe, although some seasonal movements may occur in winter in response to climatic conditions. The great northern divers present in Europe breed in Greenland and Iceland and frequent largely coastal parts of north-western Europe, as well as some large lakes, during the autumn and winter months.

3.5 Water Quality

3.5.1 On pages 5 and 81 of the ECHA document, it states that: '*...long-term dissolution of all lost/discarded lead-based fishing tackle in the aquatic environment will contribute to overall exposures of lead to the environment.*', and on page 75 the report claims that: '*... metallic lead in fishing equipment lost in aquatic systems will degrade over time contributing to overall releases of lead to the aquatic environment*'.

3.5.2 No data are presented and no published science is quoted in support of these erroneous statements. In most fishing waters, lead is stable, does not dissolve and gradually sinks into and becomes covered by anoxic bottom sediments, where it is unavailable to the water environment. The theoretical, 'worst-case scenario' exception is in fast-flowing, acidic waters, which typically support salmonid fish species. Anglers there rarely use lead sinkers because the prevailing method of capturing fish is with artificial flies (and angling intensity is usually low).

3.5.3 There appears to be no data or 'hard' evidence that demonstrates that angling lead dissolves in water and produces other environmental impacts. Indeed, the COWI (2004) report stated that: '*Apart from the poisoning of waterfowls no reported environmental effects have been ascribed to lead from fishing sinkers.*' I believe that this is still the position.

4.0 Overall Justification

4.1 The ECHA summary states (on page 2) that: '*The report concludes that there is sufficient evidence to justify further measures (on) the use of lead in fishing...*' The report does not provide that evidence or cite any novel research data to support this statement. The rationale for any restriction or bans on the manufacture, sale or use of lead in fishing sinkers is poor. Despite extensive research, I have not discovered data or scientific evidence in support of the ECHA assertion.

- 4.2 On page 82, it is written that: *'Although now relatively old (and potentially in need of some updating), this study (COWI 2004) incorporates all the necessary information for preparing an Annex XV restriction on the use of lead in commercial and/or recreational angling'*. In fact, the COWI study was deeply flawed: it contained several important and unsubstantiated assumptions; it failed to provide evidence from published science or other information in the public domain to support some of its assertions; and it included several completely contradictory statements.
- 4.3 It is worth noting that the same sentence is used on page 6 of the report but without the qualification, in parenthesis. *'Although now relatively old, this study incorporates most of the necessary information for preparing an Annex XV restriction on the use of lead in commercial and/or recreational fishing.'*
- 4.4 In a freshwater context, the use of very small split shot, weighing less than 0.06g (and often referred to as 'micro-shot' or 'dust shot') is an integral part of anglers' float-fishing equipment and in widespread use. Currently, it is legal in the UK for lead shot of these sizes to be manufactured, sold and used, and there are no non-lead substitute products. The research into lead poisoning of mute swans demonstrated that the birds did not pick up shot of these sizes, hence the lower limit of lead shot that were prohibited from use in 1987. A ban on the use of lead shot in these sizes would have a very significant impact on UK freshwater angling, and this impact would extend to many other EU countries.
- 4.5 Angling lead in the sizes employed for sea fishing is far too large for mute swans or divers to ingest. I have not discovered a single reference in either the published or the 'grey' literature to poisoning of these birds, or any other birds or animals, as a consequence of swallowing sea angling lead. As marine life is not at any risk of poisoning from sea-angling sinkers or shot, there can be no justification on wildlife conservation grounds to prohibit the larger (56.7g/2oz+) weights used in sea angling.
- 4.6 If it transpires that some form of legislation or directive encompassing the prohibition of angling lead is to be issued by the European Commission, I believe that it should focus on the sizes of lead that have been shown to be potentially dangerous to mute swans (and included those sizes of lead that are usually ingested by divers in North America).
- 4.7 Such restrictions could mimic those adopted successfully by the UK in 1987. This legislation is included in the Appendix at the end of this appraisal report.

5.0 Main Documents Consulted

AEWA. 2012.

Literature review: effects of the use of lead fishing weights on waterbirds and wetlands.

5th session of the meeting of the parties. Agreement on the Conservation of African-European Migratory Waterbirds.

American Fisheries Society & The Wildlife Society 2008.

Sources and implications of lead ammunition and fishing tackle on natural resources.

Technical Review 08-01.

American Fisheries Society [AFS]. 2012.

AFS policy statement on lead in sport fishing tackle.

Broughton B. 2004.

A brief critique of '*Advantages and drawbacks of restricting the marketing and use of lead in ammunition, fishing sinkers and candle wicks*'.

Internal report prepared for the European Fishing Tackle Trade Association [EFTTA].

Centre for Biological Diversity, Loon Lake Loon Association & Project Gutpile ['The Petitioners']. 2011.

Petition to the Environmental Protection Agency to regulate lead fishing tackle under the Toxic Substance Control Act.

Delany S. 2006.

The mute swan in Europe – a preliminary assessment of numbers, distribution and potential risks in dissemination of HPAI and H5N1.

Wetlands International.

EFTTA. 2015.

EFTTA position statement on angling lead weights (sinkers).

European Chemicals Agency [ECHA]. 2018.

A review of the available information on lead in shot used in terrestrial environments, in ammunition and in fishing tackle.

Annex XV Investigation Report.

European Commission [COWI]. 2004

Advantages and drawbacks of restricting the marketing and use of lead in ammunition, fishing sinkers and candle wicks.

Final Report, European Commission.

Grade T.J., Pokras M.A., Laflamme E.M. & Vogel H.S. 2018.

Population-level effect of leads fishing tackle on common loons.

Jour. Wild. Mgmt. 82: 155-164.

Mateo R. 2009.

Lead poisoning in wild birds in Europe and the regulations adopted by different countries.

In: *Ingestion of lead from spent ammunition: implications for wildlife and humans*, Watson R.T., Fuller M., Pokras M. & Hunt W.G. (editors), Boise: The Peregrine Fund, 71-98.

McLanaghan S. 2017.

Dropping the lead – a pressing issue of our time.

Open letter to the Angling Trust & Fish Legal (9th August 2017).

Minnesota Pollution Control Agency [MPCA] - undated.

Nontoxic tackle: let's get the lead out

Thomas V.G. & Guitart R. 2018.

Lead use in hunting and fishing – consequences to birdlife, humans, and the environment.

In: Dominick A., DellaSala & Goldstein I. (eds). *The Encyclopedia of the Anthropocene*, Vol.5, 177-180. Oxford: Elsevier.

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APPENDIX

UK Legislation on Lead in Angling

The Legal Position

The UK legal position is quite clear – legislation is in place to restrict both the use and the sale of lead fishing weights of between 0.06 and 28.35 grams (No.6 shot to 1oz) in both England and Wales. Lead weights are still sold and used legally at larger or smaller sizes, notably as very small split shot (so-called micro-shot or dust shot).

Use

Environment Agency byelaws restrict the use of lead in these sizes. Surprisingly, there is not a single, Environment Agency (EA) national byelaw regarding the use of lead to weight angling lines. Instead, there are eight regional byelaws, each in force in a particular EA region, which are worded in a similar manner. Lead may not be used to weight fishing lines, but lead incorporated into fishing line, a swimfeeder, a self-cocking float and a fishing lure are all exempt from the legislation.

The legal requirement enforced by the EA relates to the use of illegal-sized lead, and it is this circumstance over which the Agency has jurisdiction.

Sale

The sale of lead fishing weights which, if they were used in England and Wales, would result in a breach of the law, is covered by the Control of Pollution (anglers' lead weights) Regulations 1986, as amended in 1993.

Control of Pollution (Anglers' Lead Weights) Regulations 1986 - 21st November 1986

The Secretary of State for the Environment, as respects England, the Secretary of State for Wales, as respects Wales, the Secretary of State for Scotland, as respects Scotland, and the Secretary of State for Northern Ireland, as respects Northern Ireland -

(1) having consulted persons appearing to them to represent persons whose activities are likely to be prohibited or restricted by these regulations;

(2) having published in the London Gazette, in the Belfast Gazette and in the Edinburgh Gazette, and in such other publications which they considered appropriate, a notice indicating the effect of these regulations, if made, and specifying -

(a) the date on which it is proposed they should come into force;

(b) places where a draft of them might be inspected by members of the public in office hours; and

(c) a period of 14 days beginning with the date on which the notice was first published during which written representations might be made to the Secretaries of State;

(3) having considered the representations made to them in accordance with the notice; and

(4) considering it appropriate to make these regulations to prevent the substance to which they apply causing damage to animals,

in exercise of the powers conferred on them by sections 100 and 104(1) of the Control of Pollution Act 1974 and of all other powers enabling them in that behalf, hereby make the following regulations in the form of the draft mentioned in (2)(b) above:-

Citation and commencement

1 These regulations may be cited as the Control of Population (Angler's Lead Weights) Regulations 1986 and shall come into operation on 1st January 1987.

Interpretation

2 In these regulations –

"lead" includes any alloy or compound of lead;

"lead weight" means split shot or any other thing suitable for weighting fishing lines and which is neither incorporated and fully enclosed in the core of a fishing line nor incorporated in the construction of a swim feeder, a self cocking float, or a fishing fly; and

"supply" does not include supply for or by way of export

Prohibition of importation of lead in form of lead weights

3 Subject to regulation 5, the importation of lead in the form of a lead weight is prohibited.

Prohibition of supply of lead in form of lead weights

4 - (1) Subject to regulation 5, the supply of lead in the form of a lead weight for the purpose of weighting fishing lines is prohibited.

(2) A person supplying split shot shall unless the contrary is shown be presumed to supply it for the purpose of weighting fishing lines.

Exceptions

5 Regulation 4 does not prohibit the importation or supply of a lead weight of 0.06 grams or less, or of more than 28.35 grams.

Offences

6 A person who contravenes regulation 4 shall be guilty of an offence and shall be liable on summary conviction to a fine not exceeding £2,000, and on conviction on indictment to a fine.

EXPLANATORY NOTE

(This note is not part of the regulations)

These regulations apply to lead weights. Which are defined by regulation 2 to mean split shot or any other thing suitable for weighting fishing lines unless incorporated in the core of a line, or in the construction of swim-feeders, self-cocking floats or fishing flies.

Regulation 3 prohibits the importation of lead (including lead in compound or alloy) in the form of lead weights. Regulation 4 prohibits the supply of lead in the form of lead weights for the purpose of weighting fishing lines and creates a presumption that a person supplying split shot does so for the purpose of weighting fishing lines, unless the contrary is shown. These prohibitions do not apply to lead weights of 0.06 grams or less or of more than 28.35 grams.

Regulation 6 prescribes criminal penalties for contravention of regulation 4. The maximum penalty on summary conviction is a fine of £2,000 and on conviction on indictment an unlimited fine. Importation with intent to evade the prohibition contained in regulation 3 will be an offence under section 50 of the Customs and Excise Management Act 1979 (1979 c.2).

The regulations were amended slightly in January 1993.

**The Control of Pollution (Anglers' Lead Weights) (Amendment) Regulations – 13
January 1993**

The Secretary of State for the Environment, being the Minister designated^[1] for the purposes of section 2(2) of the European Communities Act 1972^[2] in relation to the abolition of restrictions on the importation of goods, in exercise of the powers conferred on him by the said section 2, and of all other powers enabling him in that behalf, hereby makes the following Regulations:

Citation, commencement and extent

1. (1) These Regulations may be cited as the Control of Pollution (Anglers' Lead Weights) (Amendment) Regulations 1993 and shall come into force on 10th February 1993.

(2) These Regulations shall apply to Great Britain and Northern Ireland.

Revocation and amendment

2. Regulation 3 (prohibiting the importation of lead weights) of the Control of Pollution (Anglers' Lead Weights) Regulations 1986^[3] is hereby revoked.

3. Regulation 5 (exceptions to regulations 3 and 4) of the Control of Pollution (Anglers' Lead Weights) Regulations 1986 shall be amended by substituting for the words "Regulations 3 and 4 do not prohibit the importation or" the words "Regulation 4 does not prohibit the".

EXPLANATORY NOTE

(This note is not part of the Regulations)

These Regulations are made in consequence of the internal market provisions of the Treaty which established the European Economic Community (the Treaty of Rome dated 25th March 1957, as amended by the Single European Act). They amend the Control of Pollution (Anglers' Lead Weights) Regulations 1986. The prohibition, set out in regulation 3 of the 1986 Regulations, on the importation of certain sizes of lead weights is revoked.

Enforcement

Use

The fisheries byelaws on the use of lead in illegal sizes for weighting fishing lines are enforced by the Environment Agency (in England) and (Wales).

Supply/Sale

Despite several inquiries, I have not discovered any definitive statement regarding who has responsibility for enforcing the regulations on the supply and sale of lead in illegal sizes for weighting fishing lines. The consensus opinion is that this is the responsibility of 'trading standards' (formerly, 'weights & measures'). Trading standards are the responsibility of local authorities, and there are approximately 200 local authority trading standards sections in the UK.

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