



Fireworks and animal welfare

TOGETHER WE CAN...IMPROVE ANIMAL WELFARE

Key points...

- ★ **The RSPCA acknowledges that fireworks are used by people throughout the year to mark different events, e.g. Bonfire Night, New Year, Chinese New Year, Diwali, etc. Whilst they can bring much enjoyment to some people, they can cause significant injury, problems and fear for other people and animals.**
- ★ **The unpredictable, loud and high intensity noises that many fireworks make can cause fear. Animals affected not only suffer psychological distress but can also cause themselves injuries, sometimes very serious ones, as they attempt to run or hide from the noise.**
- ★ **Debris produced by fireworks can also pose a hazard to animals, such as horses and farm livestock if found on the land.**
- ★ **The RSPCA believes that a number of things can be done by updating the law to improve the situation for animals and people:**
 - **limit the public sale and use of fireworks to specific dates and times;**
 - **bring in tighter restrictions on the sale of fireworks in the run up to Bonfire night;**
 - **reduce the maximum noise level of fireworks sold to the public and ensure they are labelled accurately;**
 - **license all public firework displays; and**
 - **Conduct further research to properly understand the impact of noise on animals.**

Concerns about fireworks

Fireworks are used by people throughout the year to mark different events, e.g. bonfire night, new year, Chinese new year, Diwali, etc. While they can bring much enjoyment to some people, they can cause significant injury, problems and fear for other people and animals.

Fireworks can be a source of fear and distress for many animals. In particular the sudden, loud noises that many fireworks make can cause fear. For example, it is estimated that 45% of dogs show signs of fear when they hear fireworks¹, and a New Zealand survey recorded 79% of horses as either anxious or very anxious around fireworks or over the Guy Fawkes period². Animals affected not only suffer psychological distress but can also cause themselves injuries, sometimes very serious ones, as they attempt to run or hide from the noise. Although most reports of welfare problems caused by fireworks relate to domestic pets, other animals can also experience fear, distress and/or injury as a result of them. Farm livestock are easily frightened by loud noises and sudden bright lights and can be at risk of injuring themselves on fencing, farm equipment or fixtures and fittings within their housing if startled.

Debris produced by fireworks can also pose a hazard to horses and farm livestock if found on the land. Although there is limited direct evidence, it is also likely that fireworks and their debris will cause a disturbance to wildlife, including waterfowl, and are likely to cause suffering or distress, depending on the distance from the explosive and the noise level.

¹ Blackwell, E., Casey, R., & Bradshaw, J. (2005). Firework Fears and Phobias in the Domestic Dog. Scientific Report for the RSPCA, University of Bristol, UK

² Gronqvist, G, Rogers, C. & Gee, E. (2016). The Management of Horses during Fireworks in New Zealand. *Animals* 6(20).

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There is widespread public concern about the effect that fireworks can have on animals and the RSPCA receives hundreds of calls about them every year. The peak months for calls (in order of numbers of complaints) are November, October, January and December. For example in 2018 we received 411 calls from people concerned about fireworks. The total number of calls in 2018 represents an increase of 12% from 2013, although it should be noted this figure fluctuates from year to year.

Table 1: Total number of calls received by RSPCA each year concerning fireworks

	2018	2017	2016	2015	2014	2013
All calls	411	501	434	514	425	367
England	362	474	388	452	381	339
Wales	37	24	37	38	27	26

What are the current legislative controls?

Although there is a range of legislation regulating the sale, display and safety of fireworks, the Fireworks Act 2003³ and the Fireworks Regulations 2004^{4 5} (as amended) are the main pieces concerned with regulating firework usage. It is for local authority Trading Standards officers to enforce the legislation.

The 2003 Act was introduced with the aim of reducing the noise, nuisance and injuries caused by the misuse of fireworks. Section 2 of the Act conferred powers on the Secretary of State to make Regulations to ensure there is no, or minimal, risk that fireworks will cause: death, injury, alarm, distress or anxiety to people, or death, injury or distress to animals, and destruction of or damage to property.

The main relevant provisions of the 2004 Regulations provide:

1. a prohibition of the possession of fireworks in a public place by anyone under the age of 18 years,
2. a curfew on the use of fireworks between 11pm and 7am (though this is later on November 5th (12 midnight), New Year's Eve, Chinese New Year and Diwali (1 am)), and
3. a ban on the sale of fireworks to private individuals outside of certain dates (15th October-10th November, 26th-31st December, 3 days before Diwali and Chinese new year) unless from certain licensed shops.

Penalties for breaches of the law include a fine not exceeding level 5 on the standard scale and/or imprisonment for a term not exceeding six months (Section 11 Fireworks Act 2003).

Noise nuisance caused by fireworks can, in theory, also be addressed under other legislation such as the Environmental Protection Act 1990⁶, the Anti-social Behaviour Act 2003⁷ and potentially the Anti-social Behaviour, Crime and Policing Act 2014⁸. In practice, however, the short-lived nature of firework noise makes it difficult to locate the exact source and so for Environmental Health Officers (responsible for enforcing both Acts) to take any action. Indeed an answer to a parliamentary question in 2018 suggests that few prosecutions have occurred for people letting off fireworks outside of the permitted hours⁹ (a total of three between 2015 and 2017) and this does little to protect animals from fireworks and their noise during permitted hours.

³ <http://www.legislation.gov.uk/ukpga/2003/22/contents>

⁴ http://www.legislation.gov.uk/uksi/2004/1836/pdfs/uksi_20041836_en.pdf

⁵ <http://www.legislation.gov.uk/uksi/2004/3262/contents/made>

⁶ <http://www.legislation.gov.uk/ukpga/1990/43/contents>

⁷ <http://www.legislation.gov.uk/ukpga/2003/38/contents>

⁸ <http://www.legislation.gov.uk/ukpga/2014/12/contents/enacted>

⁹ Hansard, 1 February 2018, Written question 124804

<https://www.parliament.uk/business/publications/written-questions-answers-statements/written-question/Commons/2018-01-24/124804/>

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Impact of noise on animal welfare

Aversive stimuli, such as loud noises, that are unpredictable and out of an animal's control - as is the case with fireworks - are particularly stressful for animals¹⁰. Being unpredictable, as well as intermittent and relatively infrequent, also makes it unlikely that animals will acclimatise to firework noise¹¹.

Some research has been carried out looking at the impact of noise on animals, in particular farm animals. We understand that unexpected loud or novel noises can be highly stressful to livestock¹² and that animals are more sensitive to high frequency noise than humans¹³. It is generally accepted that intermittent noises can cause more welfare problems than general background noise, for example it has been found that novel noises ranging from 80-89 dB increased the heart rate in pigs¹⁴ and prolonged exposure to noise levels above 100 dB increased the respiration rate in lambs¹⁵. As such the Welfare of Farmed Animals Regulations state that pigs must not be exposed to constant or sudden noise and noise levels above 85 dB must be avoided where pigs are kept¹⁶.

Horses in particular take flight when scared and can collide with fences, the interior of buildings, and other harmful objects as they flee. In addition, many horse owners will be in close proximity to or riding their animals when fireworks startle them; indeed many will attend their animals during periods of firework detonation and attempt to calm and safeguard them. There is therefore potential for people riding and looking after horses during firework detonation to be seriously hurt by panicking, fleeing animals¹⁷. It should also be noted that in contrast to advice for pet animals, in the case of horses, ponies or donkeys, the strategy of moving animals to an area away from detonation of fireworks (e.g. indoors), shutting curtains/blinds and distraction with music etc, are often not suitable or achievable¹⁸. This also applies to free-living wildlife as well as captive wild animals, such as those kept in zoos, where it may not always be possible to move them to an alternative area.

The effects of sudden loud noises on wild animals are difficult to assess; the impacts will vary depending on the biology of each species, and physiological effects are often harder to measure than behavioural effects in animals in the wild. However there is evidence that unpredictable loud noises do disturb wild animals, both free living and captive^{19,20}. Wild animals in captivity are usually not able to perform the same escape behaviours as they would in the wild. While little research has been carried out into the effects of fireworks on captive wild animals, there is some evidence that firework events can cause stress in zoo animals^{21,22}. As with free-living wildlife, more research is needed to fully understand the effects of fireworks

¹⁰ Bassett L & Buchanan-Smith HM (2007) Effects of predictability on the welfare of captive animals. *Applied Animal Behaviour Science* 102: 223-245

¹¹ Wright AJ, Soto NA, Baldwin AL, Bateson M, Beale CM, Clark C, Deak T, Edwards EF, Fernandez A, Godinho A, Hatch LT, Kakuschke A, Lusseau D, Martineau D, Romero LM, Weilgart LS, Wintle BA, Notarbartolo-di-Sciara G & Martin V (2007) Anthropogenic noise as a stressor in animals: a multidisciplinary perspective. *International Journal of Comparative Psychology* 20: 250-273

¹² Grandin, T. *Behavioural Principles of Livestock Handling*, p. 2, American Registry of Professional Animal Scientists, 1989.

¹³ <http://www.grandin.com/behaviour/principles/noise.html>

¹⁴ Temple Grandin, "Livestock handling and transport" Pg 65, pg 415

¹⁵ Ames DR and Arehart LA 1972 Physiological responses of lambs to auditory stimuli. *Journal of Animal Science* 34: 994-998

¹⁶ Welfare of Farmed Animals (England) Regulations 2007 (Schedule 8, part 2), Welfare of Farmed Animals (Wales) Regulations 2007 (Schedule 8, Part 2)

¹⁷ McGreevy, P.D., Henshall, C., Starling, M.J., McLean, A.N. & Boakes, R.A. (2014). The importance of safety signals in animal handling and training. *Journal of Veterinary Behavior* 9, 382-387.

¹⁸ Gronqvist, G, Rogers, C. & Gee, E. (2016). The Management of Horses during Fireworks in New Zealand. *Animals* 6(20).

¹⁹ Shamoun-Baranes J, Dokter A M, van Gasteren H, van Loon E, Leijnse H & Bouten W (2011). Birds flee en masse from New Year's Eve Fireworks. *Behavioural Ecology* 22(6): 1173-1177

²⁰ Pedreros-Echevarria E, Sepúlveda M, Gutierrez J, Carrasco P & Quiñones RA (2016) Observations of the effect of a New Year's fireworks display on the behavior of the South American sea lion (*Otaria flavescens*) in a colony of central-south Chile. *Marine and Freshwater Behaviour and Physiology* 49(2): 127-131

²¹ Rodewald A, Gansloßer U & Kölpin T (2014) Influence of fireworks on zoo animals: studying different species at the Zoopark Erfurt during the classic nights. *International Zoo News* 61(4): 264-271

²² Schell CJ, Young JK, Lonsdorf EV & Santymire RM (2013) Anthropogenic and physiologically induced stress responses in captive coyotes. *Journal Of Mammalogy* 94(5): 1131-1140.

on captive wild animals; in the meantime, we advocate adopting the precautionary principle to avoid the potential of causing harm.

It is clear that more research on the impact of firework noise on all species, including wild animals, horses and pet animals, is required but we feel there is sufficient evidence to support the view that fireworks have a negative impact on animals and that legislative steps should be taken to reduce this impact.

Recommendations

It is clear from the information we have that fireworks can impact negatively on animals as well as people. The RSPCA believes the law is failing as it does not prevent or reduce the risk of fireworks causing distress or anxiety to people or death injury or distress to animals. We believe that a number of things can be done by updating the law to improve the situation for animals (and people).

1. Limit the public sale and use of fireworks to specific dates and times

The RSPCA supports the current restrictions on the private use of fireworks to agreed traditional dates, i.e. November 5th, New Year's Eve, Chinese New Year and Diwali. These dates are already recognised as being exceptional in the Regulations and we believe that the existing prohibition on sales at all other times could and should be extended to include use as well. We believe this could be enforced by use of a licensing system for private displays outside of these dates (see point four below).

2. Tighter restrictions on the sale of fireworks in the run up to Bonfire night

In addition to this we also feel that tighter restrictions could be placed on the sale of fireworks in the run up to Bonfire night. At present they can be sold from 15th October through to 10th November whereas the restrictions for the sale of fireworks for the other traditional dates are much tighter. Based on the experience of New Zealand we believe the sales restriction should be limited to one week before Bonfire night.

3. Reduce the maximum noise level of fireworks sold to the public and ensure they are labelled accurately

We would also like to see the maximum permitted noise level of fireworks for public sale (i.e. those that fall within categories F1, F2 or F3) reduced from 120 dB to 90 dB and labelled as 'loud' or 'low noise' to allow consumers to make an informed decision. Setting the limit at 90 dB would be consistent with the approach in other countries and encourage manufacturers to design and produce quieter fireworks.

4. Licensing of all public firework displays

We would like to see all public fireworks displays licensed by the relevant licensing authority, with information about the proposed display provided in the local area (allowing mitigating measures to be put in place) and a process for local residents to appeal against the granting of the licence. This process should also apply to people seeking to hold private displays at special events (such as weddings). The licensing process should require that due consideration has been paid to the potential negative impact on animals and, where possible, mitigating measures taken to reduce this impact.

5. Further research is needed to properly understand the impact of noise on animals

Based on the limited research we have identified we have reached our position but acknowledge that there is a need to have a better understanding of the impact of noise levels and frequency on animal welfare so that future developments can be more effectively informed.