FIREWORKS FRIGHTEN ANIMALS

BANG OUT OF ORDER

FIREWORKS FRIGHTEN ANIMALS
SUMMARY

What is the problem with fireworks?

Fireworks are used by people throughout the year to mark different events, e.g. Bonfire Night, New Year, Chinese New Year and Diwali, as well as at private events such as weddings. While they can bring much enjoyment to some people, they can cause significant injury, problems and fear to other people and animals. The RSPCA therefore supports measures which will help ensure people can enjoy fireworks responsibly while mitigating potentially significant animal welfare problems for pets, horses, farm animals and wildlife.

Fireworks can be a source of fear and distress for many animals – in particular the sudden, loud noises. For example, it is estimated that 45 percent of dogs show signs of fear when they hear fireworks\(^1\), and a New Zealand survey recorded 79 percent of horses as either anxious or very anxious around fireworks over the Guy Fawkes period\(^2\). 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. Horses and farm livestock are easily frightened by loud noises and sudden bright lights and, if startled, they can be at risk of injuring themselves on fencing, farm equipment or fixtures and fittings within their housing.

Furthermore, the location of a fireworks display should be selected carefully so as to avoid setting off fireworks near any known group of wild animals, such as lakes with waterfowl or known nesting sites in the spring and summer. Debris produced by fireworks can also pose a hazard to horses and farm livestock if found on the ground and can also cause disturbances to wildlife.

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 percent from in 2013. We acknowledge the figure fluctuates from year to year, but on average the RSPCA receives around 400 calls a year relating to fireworks in England and Wales.

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

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>All calls</td>
<td>411</td>
<td>501</td>
<td>434</td>
<td>514</td>
<td>425</td>
<td>367</td>
</tr>
<tr>
<td>England</td>
<td>362</td>
<td>474</td>
<td>388</td>
<td>452</td>
<td>381</td>
<td>339</td>
</tr>
<tr>
<td>Wales</td>
<td>37</td>
<td>24</td>
<td>37</td>
<td>38</td>
<td>27</td>
<td>26</td>
</tr>
</tbody>
</table>

CASE STUDY:

In 2018, two dogs at one of the RSPCA’s branch animal centres were left injured and traumatised as a result of fireworks. The fireworks were so scary for the dogs that one of them (Bailey, a Labrador-cross) broke out of his kennel – losing a tooth in the process – and another dog (Eddie, a Staffordshire Bull Terrier-cross) ruptured one of his cruciate ligaments as he panicked and jumped about in his kennel. Eddie’s injury required surgery to repair the damage and a couple of months of post-operative rehabilitation.

CASE STUDY:

In November 2018, in Swansea, South Wales, the owner of a horse was left heartbroken after her horse became so scared of fireworks that he ran himself to death.

On Bonfire night his owner had stayed with him in his stable most of the night to calm him down as a result of the noise. However, a week later, she thought the fireworks were over and left him over night.

Solo’s owner was called by neighbours after they spotted him in his field in agony. Sadly he had become so spooked by some fireworks that he had run round and round his field, twisting his gut. The vet said that there was nothing that could be done and so he had to be put to sleep.

Solo’s owner said she would not have left him alone if she had known there was going to be another fireworks display.
HOW ARE NOISE LEVELS MEASURED?

The RSPCA’s main concerns about fireworks are their unpredictable nature and the noise levels, although type of noise and the audible frequencies produced may also be an important factor (see below). Noise levels are recorded in decibels (dB) which are units of sound intensity. The range of audible sound, for a human, is from 0 dB to 140 dB, which is taken to be the threshold of pain for adults (120 dB for children). It should be noted that other animals may have different sensitivities to different frequencies.

In the case of fireworks, the sound of each individual firework may be relatively short in duration but intense and unpredictable. Research on the impact of sudden and unpredictable noise exposure on animals is limited, and not necessarily directly comparable with prolonged noise exposure.

Table 2: Different activities and their typical noise levels
(taken from Centers for Disease Control and Prevention (CDC) website)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Noise level (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal breathing</td>
<td>10</td>
</tr>
<tr>
<td>Ticking watch</td>
<td>20</td>
</tr>
<tr>
<td>Soft whisper</td>
<td>30</td>
</tr>
<tr>
<td>Refrigerator hum</td>
<td>40</td>
</tr>
<tr>
<td>Normal conversation</td>
<td>60</td>
</tr>
<tr>
<td>Washing machine/dishwasher</td>
<td>70</td>
</tr>
<tr>
<td>City traffic (inside the car)</td>
<td>80-85</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>95</td>
</tr>
<tr>
<td>Shouting or barking in the ear</td>
<td>110</td>
</tr>
<tr>
<td>Standing beside or near sirens</td>
<td>120</td>
</tr>
<tr>
<td>Firecrackers</td>
<td>140-150</td>
</tr>
</tbody>
</table>

In the case of fireworks, the sound of each individual firework may be relatively short in duration but intense and unpredictable. Research on the impact of sudden and unpredictable noise exposure on animals is limited, and not necessarily directly comparable with prolonged noise exposure.

WHAT IS THE IMPACT OF NOISE ON ANIMALS?

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 them. Being unpredictable, as well as intermittent and relatively infrequent, also makes it unlikely that animals will acclimatise to fireworks noise.

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 livestock and that animals are more sensitive to high frequency noise than humans. 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 pigs and prolonged exposure to noise levels above 100 dB increased the respiration rate in lambs. As such, the Welfare of Farmed Animals Regulations state – in both England and Wales – that pigs must not be exposed to constant or sudden noise and noise levels above 85 dB must be avoided where pigs are kept.

Horses in particular take flight when scared and can collide with fences, the interior of buildings, and other harmful objects as they flee. In a survey on the management of horses during fireworks in New Zealand, running was the most frequent response to fireworks, with 26 percent of respondents reported horses breaking through fences. 26 percent of respondents reported their horses had received injuries due to fireworks, ranging from lacerations, strains and sprains to most serious of all, broken limbs (seven percent), an injury which most usually results in euthanasia. The British Horse Society reports 20 deaths, 10 severe injuries, and 88 mild to moderate injuries in horses in fireworks incidents since 2010. 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 fireworks detonation and attempt to calm and safeguard them. There is therefore potential for people riding and looking after horses during fireworks detonation to be seriously hurt by panicked, fleeing animals.

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 achievable. 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. For example, one study in the Netherlands showed that birds were disturbed by New Year’s Eve fireworks in three consecutive years, and thousands of birds were observed to take flight in response to the fireworks. Indeed, fireworks are classed as highly disturbing to some bird species, and have been associated with the abandonment of nests or even whole colonies.

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 fireworks events can cause stress in zoo animals. As with free-living wildlife, more research is needed to fully understand the effects of fireworks on captive wild animals; in the meantime, we advocate adopting the precautionary principle to avoid the potential of causing harm.

21. When human activities may lead to morally unacceptable harm that is scientifically plausible but uncertain, actions shall be taken to avoid or diminish that harm. UNESCO and World Commission on the Ethics of Scientific Knowledge and Technology (2005). The Precautionary Principle. UNESCO.
Studies have found fireworks to be the most common cause for fear responses in dogs\(^{22}\), and it is estimated that 45 percent of dogs show signs of fear when they hear fireworks\(^{23}\). A New Zealand survey found that six percent of cats and dogs suffered from physical injuries as a result of fireworks – for example, being involved in road traffic accidents whilst trying to escape\(^{24}\). Amongst the injuries there were sadly, several fatalities. In addition to the short-term distress caused, it’s thought that dogs will often generalise their fear of one loud noise, such as fireworks, to other similar, explosive noises such as thunder\(^{25}\). This could cause significant long-term impact throughout the animals’ lives.

The impact of fireworks on cats is less understood than in dogs, although the *PDSA Animal Wellbeing Report 2018*\(^ {26}\) found that 34 percent of owners reported that their cat was afraid of fireworks. It is likely that many owners are unaware that their cats are fearful, or of the severity of the fear because cats are more likely to display passive responses such as hiding (compared to more active responses such as vocalisations in dogs).

It is clear that more research on the impact of fireworks 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.


WHAT DOES THE LAW SAY?

Although there is a range of legislation regulating the sale, display and safety of fireworks, the Fireworks Act 2003 and the Fireworks Regulations 2004 (as amended) are the main pieces concerned with regulating fireworks usage in England, Scotland and Wales.

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 (Regulation 4)
2. a curfew on the use of fireworks between 11pm and 7am (though this starts later on November 5th (12 midnight), New Year’s Eve, Chinese New Year and Diwali (1 am)) (Regulation 7)
3. a ban on the possession of category 4 fireworks (i.e. those whose noise level exceeds 120 dB) by the public (Regulation 5)
4. a prohibition of the supply of excessively loud category 3 fireworks (i.e. over 120 dB) (Regulation 8)
5. a ban on the sale of fireworks to private individuals outside of certain dates (15th October-10th November, 26th-31st December, three days before Diwali and Chinese New Year) unless from certain licensed shops (Regulation 9)
6. an exception to these prohibitions for professionals who use fireworks in their work (for example putting on professional displays, special effects in theatre, film or television, etc) (Regulation 6).

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).

In addition to this, Schedule 1 of the Pyrotechnic Articles (Safety) Regulations 2015 sets out a categorisation system for fireworks in the UK. Category F1, F2 and F3 fireworks must not exceed a maximum noise level of 120 dB.

Table 3: Categorisation table for fireworks used in the UK taken from the 2015 Regulations

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1</td>
<td>Fireworks which present a very low hazard and negligible noise level and which are intended for use in confined areas, including fireworks which are intended for use inside domestic buildings.</td>
</tr>
<tr>
<td>F2</td>
<td>Fireworks which present a low hazard and low noise level and which are intended for outdoor use in confined areas.</td>
</tr>
<tr>
<td>F3</td>
<td>Fireworks which present a medium hazard, which are intended for outdoor use in large open areas and whose noise level is not harmful to human health.</td>
</tr>
<tr>
<td>F4</td>
<td>Fireworks which present a high hazard, which are intended for use only by persons with specialist knowledge and whose noise level is not harmful to human health.</td>
</tr>
</tbody>
</table>

Noise nuisance caused by fireworks can, in theory, also be addressed under other legislation such as the Environmental Protection Act 1990, the Anti-social Behaviour Act 2003 and potentially the Anti-social Behaviour, Crime and Policing Act 2014. In practice, however, the short-lived nature of fireworks noise makes it difficult to locate the exact source and so for police or Environmental Health Officers 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 hours – a total of three between 2015 and 2017 – and this does little to protect animals from fireworks and their noise during permitted hours.

30. Except for Regulation 7 of the 2004 Regulations.
Table 4: The laws surrounding fireworks control vary in other countries – from outright prohibitions through to tighter controls

<table>
<thead>
<tr>
<th>Country</th>
<th>Overview of the law</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Netherlands</td>
<td>The public cannot buy fireworks throughout the year except for three days prior to New Year’s Eve. Fireworks can only be used on 31st December between 6pm and 2am. In certain areas, such as near hospitals, animal shelters, petting zoos and certain residential areas, fireworks are not allowed due to the added nuisance and risk.</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>There are very strict controls over fireworks – you cannot possess, buy or use fireworks unless you have a licence and that licence must be produced when purchasing any fireworks.</td>
</tr>
<tr>
<td>Republic of Ireland</td>
<td>Only category F1 fireworks are available for sale, possession and use by members of the public. Only professionals are allowed to use categories F2, F3 and F4 fireworks.</td>
</tr>
<tr>
<td>Belgium</td>
<td>Only category F1 and F2 fireworks can be sold to members of the public. They must be at least 12 years old to buy F1 fireworks and 16 years old to buy F2. In Flanders the local government proposes a ban on the use of fireworks unless they agree otherwise. Even in such circumstances permission would be limited to certain times and venues. The prohibition is based on animal welfare concerns. The city of Mechelen has banned fireworks on 11 and 21 July due to animal welfare concerns.</td>
</tr>
<tr>
<td>Germany</td>
<td>Shops in Germany are only allowed to sell fireworks from 29th-31st December. Many major German cities organise professional fireworks shows. Members of the public who are over 18 years old are allowed to buy and ignite fireworks of Category F2 for several hours on 31 December and 1 January and each German municipality is authorised to limit the number of hours this may last locally.</td>
</tr>
<tr>
<td>India</td>
<td>Fireworks are banned in Delhi due to severe air pollution. In other locations there is a noise limit of 65dB during the daytime and 55dB at night.</td>
</tr>
</tbody>
</table>

In New Zealand, research was carried out into the sale of fireworks by retailers to try and identify solutions that would prevent fireworks being misused. This was carried out because increasing numbers of people were experiencing noise nuisance and there had been an increase in police and fire service call outs. It led to amendments to the New Zealand law in 2007 which:

- reduced the period of time retailers could sell fireworks to the public to the four days prior to and including 5 November (although with no controls over when fireworks can be set off)
- increased the legal age to purchase fireworks to 18 years
- decreased the explosive content of fireworks sold by retailers to reduce noise (to 90dB) and the number of noise nuisances raised.

37. https://wetten.overheid.nl/BWBR0013360/2016-10-17#Hoofdstuk1
38. Explosives (Fireworks) Regulations (Northern Ireland) 2002, Pyrotechnic Articles (Safety) Regulations 2015
It is understood that the New Zealand Government is experiencing further calls to take action on this issue as members of the public are concerned about animal welfare therefore it is an issue that is very current. Interestingly, fireworks are specifically banned at rodeo events in New Zealand as they are considered to cause an unnecessary stress on the animals46.

The RSPCA believes the law is currently failing as the existing Regulations do not prevent or reduce the risk of fireworks causing distress or anxiety to people or death, injury or distress to animals. It has been 15 years since much of the law concerning fireworks was passed. New Zealand looked into this issue over ten years ago and identified evidence to support bringing in tighter controls. Greater awareness and understanding of the negative impacts of fireworks on people and animals is evident and as such we believe the Regulations should be updated to reflect current knowledge and understanding.

WHAT IS THE CURRENT SITUATION?

This is an issue that resonates with the public and thousands of our supporters and the wider public have significant concerns about fireworks. For example, in 2016 over 104,000 people signed an e-petition47 calling for tighter regulation of fireworks and in 2017 a further e-petition48 was supported by over 113,000 people. In 2018 – in less than four weeks – 330,000 people signed a petition49 on the matter. It is clear there is very strong public feeling on this issue.

The petitions also saw a number of debates within Westminster. During a debate on 29th January 201850 the new Office of Product Safety and Standards was referred to as a body that would ‘come forward with suggestions and advice to Government’ on this matter. Furthermore, on 9th May 2018, Holly Lynch MP asked the then Minister, Andrew Griffiths MP, when interested MPs would be involved in a meeting to discuss the regulation and sale of fireworks. The Minister responded that officials were in the process of setting up such a meeting, however, a date is yet to be set51.

The Chief Constable for Greater Manchester Police has raised concerns about the impact of fireworks misuse in his community52 and Rochdale Borough Council is looking at passing a motion calling for a reduction in noise levels of fireworks. The RSPCA has also called on other councils encouraging them to pass similar motions.

The RSPCA has discussed its concerns with the Office of Product Safety and Standards (OPSS) and we have agreed to work with them to increase awareness and education around protecting animals from fireworks.

The RSPCA is seeking a meeting with the British Fireworks Association to understand the industry’s concerns about any further restrictions and also encourage them to develop and use approaches that are more animal welfare friendly.

At the end of February 2019, the UK Parliament’s Petitions Committee (a House of Commons Select Committee) launched an inquiry into the issue of fireworks, due to the significant public interest in fireworks issues demonstrated by the petitions discussed above53. The RSPCA responded to this inquiry54 setting out its concerns and gave oral evidence in July 2019.

In addition to this, a number of animal welfare charities have noted they see an increase in public and supporter concerns about fireworks. For example the Blue Cross has said they see a marked rise in the number of pets brought to their clinics requiring medication during periods when fireworks are being detonated55. The PDSA undertook research on this issue through their annual Wellbeing report56, finding that 51 percent of veterinary professionals had seen an increase in pets with phobias (e.g. of fireworks, etc) in the last two years, 40 percent of dog owners said their pet is afraid of fireworks and 83 percent of veterinary professionals agree that fireworks should be regulated to allow use only for licensed events or on certain dates.

47. https://petition.parliament.uk/archived/petitions/109702
48. https://petition.parliament.uk/petitions/201947
50. Hansard, 29 January 2018, 261WH.
52. https://www.bbc.co.uk/news/uk-england-manchester-45917203
HOW CAN OWNERS PROTECT THEIR ANIMALS?

Noise phobia in pets is a treatable condition which owners should not ignore. In the long term it is possible for pets to learn to be less afraid of loud noises, and owners should talk to their vet who will, if necessary, refer them to a professional clinical animal behaviourist.

There are also lots of simple things pet owners can do to help their animals cope with fireworks, such as ensuring that dogs and cats are kept securely indoors, dulling the noise of fireworks by closing windows and curtains and using music or the TV to mask the noise, as well as providing pets with a safe place to hide if they feel frightened.

Small animals who live outside should be provided with lots of extra bedding to allow them to burrow and should have some of their enclosure covered with blankets to mask the noise.

Horse owners and keepers should check for any fireworks displays planned locally and ask organisers to site fireworks well away from their horses, aimed in the opposite direction.

It is sensible to keep horses in their familiar environment, in their normal routine with their usual companions. If a horse is staying in their field, checks should be made that the fencing is secure and there are no dangerous objects they could collide with if startled. If stabled, hay nets should be secured so the horse cannot get caught up.

Owners should stay with their horse if they know fireworks are going to be set off, but they should be aware of their own safety – a startled horse can be dangerous.

The British Horse Society has tips and advice on keeping horses safe during the fireworks season – these can be found at: www.bhs.org.uk/advice-and-information/safety-advice-and-information/common-incidents/fireworks

Potentially vulnerable farm animals must also be given due consideration and protection – whether they are housed or kept outside – at times of the year when they may be affected by fireworks.
RECOMMENDATIONS

It is clear from the available information 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 updating the law would improve the situation for animals (and people).

1. Limit the public sale and use of fireworks to on or close to specific dates and times
   The RSPCA supports the current restrictions on the sale of fireworks to the public on or close 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 a licensing system for private displays outside of these dates (see point 4 below).

2. Tighter restrictions on the sale of fireworks in the run up to November 5th
   We feel that tighter restrictions should be placed on the sale of fireworks in the run up to November 5th. 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 permission should be limited to 29th October through to 5th November.

3. Reduce the maximum noise level of fireworks available to the public and ensure they are labelled accurately
   We would 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 the introduction of a labelling system identifying the noise level of fireworks (e.g. ‘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 fireworks 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 several weeks in advance (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 due consideration of the potential negative impact on animals and, where possible, mitigation measures to reduce this impact.

5. Raising awareness
   In addition to changes in the law, we believe there is a real need to raise awareness amongst pet owners about fireworks phobia and that it can be treated (in dogs at least) in the long term, rather than being something that they and their pets have to suffer every year. The importance of needing to prepare themselves and their pets in advance in order to be most effective, rather than just before the fireworks season occurs also needs to be emphasised and could have a significant benefit to dogs and their owners.

   In addition, there is a need to raise awareness about the impact of fireworks on animals to the wider public to encourage them to be more considerate of pets, horses and livestock as well as local wildlife.

6. Further research is needed to properly understand the impact of fireworks noise on animals
   We have reached our position based on the limited research we have identified but acknowledge that there is a need to have a better understanding of the impact of fireworks noise (including the contribution of factors such as loudness and audio spectrum frequencies produced) on animal welfare so that future developments can be more effectively informed.