



Litter from the Air

Balloons, sky lanterns and fireworks

Keep Wales Tidy December 2017



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gymru'n wales
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Jones, H. Keep Wales Tidy, December 2017

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Summary

Releasing balloons and sky lanterns and using fireworks, create spectacles which are enjoyed by many across Wales. However, their visual spectacle is short lived, while their negative impacts have far reaching and long-lasting effects on people, animals and the environment.

These are a concern to Keep Wales Tidy as well as many other organisations and the general public. This is evident from ongoing campaigns against the release of balloons and sky lanterns and petitions calling the government to tighten firework laws.

While the Welsh Government has not yet gone as far as to introduce any legislative changes, progress has been made. A campaign which was started by Green Flag Eco-Schools across Cardiff ultimately led to the government commissioning independent research into the impacts of helium balloons and sky lanterns. The findings of this research prompted the Minister to urge local authorities to introduce voluntary bans on the release of these products, and many local authorities have brought in bans on the release of sky lanterns and (to a lesser extent) balloons. In addition, efforts to educate the public around fireworks is reducing the incidents of anti-social behaviour over the Halloween and Bonfire Night period.

None of this would have been possible without the hard work of many people and organisations working together with a common aim. The use of balloons, sky lanterns and fireworks still pose a threat to our terrestrial and marine environments, and partnership working will continue to be key if we are to make more of an impact in the future.

To further minimise the use and impact these items, Keep Wales Tidy recommends the following actions:

- **Wales to Become the First Airborne Litter Free Nation in the UK**

Since the larger events tend to happen on public land, voluntary bans are likely to have a significant impact. Keep Wales Tidy and others can continue to encourage more local authorities to implement these bans, which could lead to Wales becoming the first Airborne Litter Free Nation in the UK.

- **Monitoring**

Data is key to understanding the issue and monitoring the impact of any action taken. In 2017-18, as part of our street cleanliness surveys, Keep Wales Tidy will collect data on balloon litter throughout Wales and firework litter for surveys in local authorities taking place during November.

- **Research**

Research informs us of the impacts of our actions, yet there are currently gaps in our knowledge. These include the impact (particularly in relation to balloon releases) on livestock, animal health and marine animals, the time it takes for balloons to decompose, the impact on air quality and the scale of the problem of all three products nationally.

- **Education and Campaigns**

Informing people of the impacts of using these items allows them to make more informed decisions on the actions they take. Topics identified include:

- promoting users to follow guidance on the use of the three products
- discouraging the use of red sky lanterns (which can be mistaken for distress flares)
- promoting the occurrence of and attendance of organised firework displays or asking people to safely clear up after domestic events
- promoting alternative activities

Behaviour change in these areas would improve safety and reduce potential negative impacts.

- **Legislation, Enforcement and Lobbying**

Keep Wales Tidy considers the intentional release of balloons and sky lanterns as a form of littering and believes that their release should be treated as so in both legislative and enforcement terms. Having the release of these products defined as litter in the legislation would send out a strong message to consumers.

The need for improved information (which falls in line with guidelines) as well as better labelling in relation to fireworks noise levels, has also been identified.

Introduction

During the calendar year, there are many occasions across Wales, including annual celebrations and ad-hoc one-off community and family events, which involve the intentional release of items into the outdoor environment. These are often linked with many people coming together to enjoy the spectacle. Unfortunately, what is often overlooked is the fact that these items have wide-ranging negative impacts. Keep Wales Tidy is concerned that these items return to the ground, sometimes miles away, as litter, and the harmful effects they can cause.

This paper will consider the following 3 different items, which are released into the air across Wales:

- **Balloons** are commonly released as a way of raising funds and/or publicity. They are also sometimes released in somebody's memory.
- **Sky lanterns** (also known as Chinese lanterns) are sometimes released during birthday and wedding parties as well as festivals. They're also commonly released during New Year and Chinese New Year celebrations. Like balloons, sky lanterns are also released to mark somebody's memory or passing.
- **Fireworks** are mostly used during Bonfire Night and New Year's Eve celebrations but are also used to mark religious and cultural festivals such as Chinese New Year, Diwali (Hindu) and Hanukkah (Jewish)¹. They are popular as part of public displays as well as for private domestic use.

While these events aren't as routine to cause as much litter as items used daily such as cigarettes, chewing gum, food and drink, they remain a concern and can cause significant damage, especially when released 'en masse'. This is especially so in the areas where events take place or at certain times of year, and particularly in culturally diverse communities where there are likely to be a wider variety of events at more regular intervals. They also have the potential to cause problems far from where they were originally used as people have no control over them once they are released. Balloons for example, are believed to be able to reach heights of about 5 miles before they shatter into small pieces – but approximately 10% of balloons which don't reach that height stay intact and can travel for tens of miles, often ending up in the sea.² Some have been found thousands of miles away from where they were released.³



Understanding the Problem

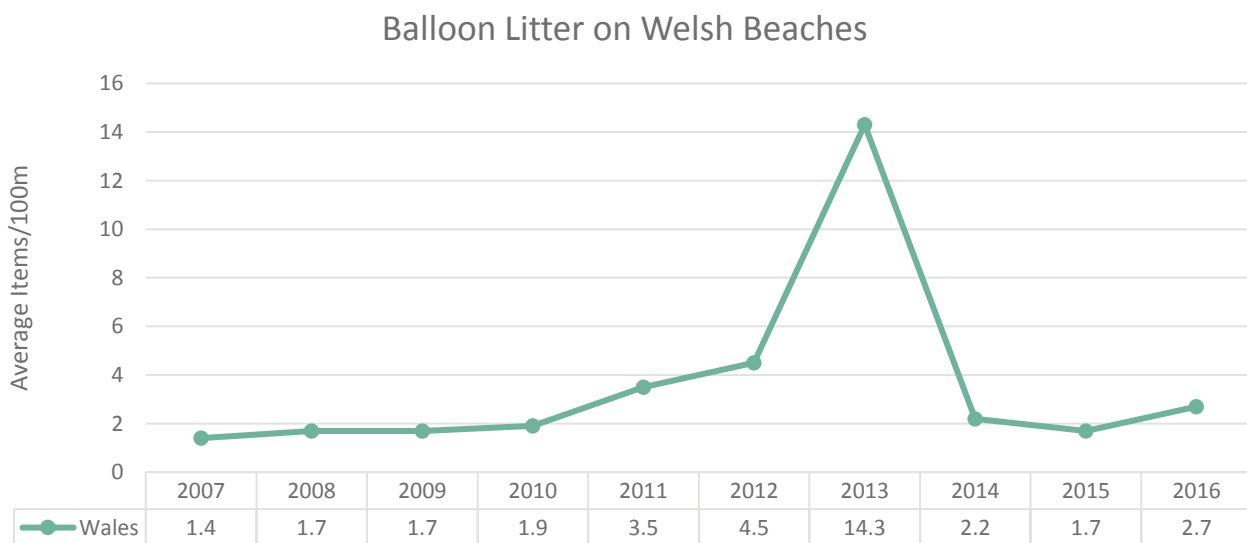
Balloons

Balloons continue to be a popular product. In 2013, the UK market value for helium balloons was estimated at £150 million.⁴ Given the comparative Welsh population, it would be reasonable to put the Welsh figure in the region of £7.5 million.

Keep Wales Tidy has long recognised the litter potential of balloons. We have observed balloon litter in each of Wales' 22 local authorities during our street cleanliness surveys, which includes whole balloons and fragments. In 2008-09, on average, balloon litter was recorded on more than 1 in 10 streets across Wales, but the figure reached almost 20% in one local authority.⁵

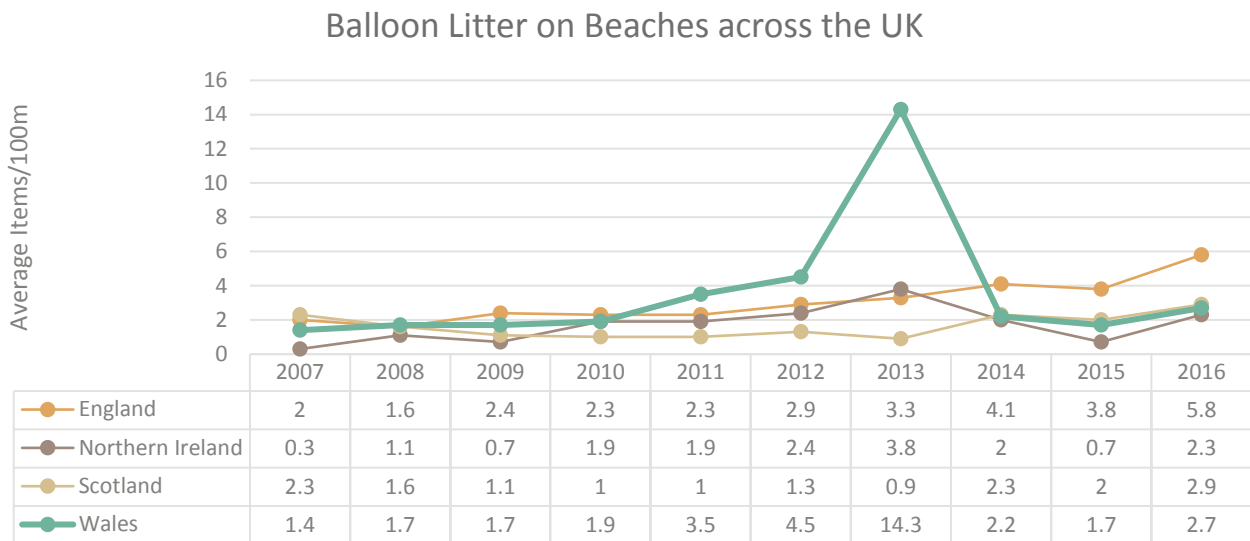
Likewise, balloons are also regularly found on our beaches. Each year, The Marine Conservation Society organise Beachwatch - the national beach cleaning and litter survey programme. Data from the last decade is shown in the graphs below.⁶

Figure 1: Balloon Litter on Welsh Beaches by Year



Balloon litter (average items per 100m) increased slightly from 1.4 in 2007 to 1.9 in 2010. The increase was more dramatic over the following 2 years, reaching 4.5 by 2012. Then 2013 saw a huge increase to 14.3 (which appears to be an anomaly), before falling to 2.2 the following year. Last year saw an increase to 2.7. Although this figure is lower than those seen in 2011-12, it remains almost double that seen in 2007.

Figure 2: Balloon Litter on UK Beaches by Nation and Year



The above graph shows balloon litter on beaches in the context of other UK nations. During 2011-2012, the Welsh figure was higher than anywhere else in the UK, which continued until the 2013 Welsh peak. However, since then, the English figures have been the highest seen for balloon litter, with the Welsh and Scottish figures at a similar level a little below, and the figures for Northern Ireland the lowest seen across the UK. Unfortunately, however, the figures for all nations increased in 2016 and are all above their respective levels seen a decade ago.

Although it is difficult to establish whether the balloons found on our streets and beaches are used for private use or part of a large release event, the impact of the individual balloon on the environment is the same.

Balloon litter is dangerous to livestock and wildlife⁷:

- It can be mistaken for food and then once eaten blocks digestive systems, causing animals to starve.
- String on balloons can entangle or trap animals.

Dolphins, whales, turtles, seabirds and other animals have been killed by balloons, with turtles at particular risk as they mistake balloons for their jellyfish prey.⁸ In 2011, a cow in Kent choked to death on the string of a balloon which was released by school children at an event in London - the farmer was eventually awarded compensation.⁹

Most balloons are either made from latex or foil, materials that remain in the environment for a long time.

Sky Lanterns

Sky lanterns are made overseas (primarily in the far east), and they are imported here to be marketed and sold.¹⁰ There has been a decline in the sales of sky lanterns over recent years¹¹, and a number of retailers, including Tesco and Poundland have stopped selling them¹². It is estimated that the UK market is valued

between £6 million and £16 million, with fewer than 100 people believed to be employed by the sector.¹³ This would put the comparative value for Wales at around £300,000.

As well as an open flame heat source, which lifts it into the air, sky lanterns also consist of a paper-covered wire or bamboo frame, which can take decades to biodegrade after falling back down to earth.¹⁴ They carry the same potentially lethal dangers to animals as are posed by balloons, as described above. However, if eaten, the sharp parts of the sky lantern can tear and puncture the animal’s throat or stomach, which can cause internal bleeding,¹⁵ and a cow died after eating a sky lantern in Chester in 2011¹⁶.



The National Farmers Union (NFU) has called for a ban on the release of balloons and sky lanterns due to the risk they pose to animals as well as the fire risks of sky lanterns.¹⁷ The environmental impacts of both items (including the issue of litter) were the subject of a recent piece of research.

Spotlight On: Research into the Impacts of Helium Balloons and Sky Lanterns

In 2013, the Department for Environment, Food and Rural Affairs (DEFRA) and the Welsh Government commissioned joint research into the impacts of helium balloons and sky lanterns. The results of the associated risks are summarised in the table below:

Risk	Impact of Helium Balloons	Impact of Sky Lanterns
Livestock, animal health and marine animals	<ul style="list-style-type: none"> • Impact of ingestion by animals is very small and confined to isolated incidents, although under reporting may be an issue. • Considering the inaccessibility of habitats, harm to marine life often goes unseen. <p><i>More research needed along with improved recording of land-based incidents.</i></p>	<ul style="list-style-type: none"> • Cases reported annually of animals affected is very small, but it is recognised that under reporting may be significant and that places close to or downwind of a local event may be more vulnerable. <p><i>Minor significance overall.</i></p>

Fire	N/A	<ul style="list-style-type: none"> Incidents of fires having started by sky lanterns have been reported from a variety of sources. Individual incidents can potentially cause significant disruption, loss of property and risk to human and animal life. <p><i>Significant risk.</i></p> <ul style="list-style-type: none"> Localised effects can be large in some areas. <p><i>Contribution to overall littering is small.</i></p>
Environment – littering on land and at sea	<ul style="list-style-type: none"> Helium balloon littering is of only a minor significance. However, the time it takes for the debris to degrade is an important factor, which is currently inconclusive. <p><i>More research needed into degradation rate.</i></p>	
Aviation	<ul style="list-style-type: none"> Risk related to the fact that aircraft need to manoeuvre to avoid helium balloons. Compliance to Civil Aviation Guidelines is needed. <p><i>No additional control measures needed.</i></p>	<ul style="list-style-type: none"> Of 48 incidents reported by The Civil Aviation Authority (CAA) as a result of sky lanterns and helium balloons between 2001 and 2012, sky lanterns accounted for 40 of them. When aircraft are on the ground, sky lanterns are a risk to taxiing aircraft and can cause delays to take-off and landing. When airborne, the safety risk relates to possible ingestion into engines. According to CAA guidelines, sky lanterns shouldn't be released from within 10 miles of an airfield, but this is inconsistent with the information provided with some products and is unlikely to be common knowledge amongst users. <p><i>Improved consumer information needed from suppliers which is consistent to guidelines.</i></p> <ul style="list-style-type: none"> Sky lanterns (particularly the red ones) can be mistaken for distress flares. UK Marine and Coastguard Agency data shows that false call-outs reached a peak in 2010, with lower numbers of incidents recorded in subsequent years. <p><i>Sky lanterns pose a significant risk to coastal rescue services. The most practical way to mitigate the risks of false call-outs is seen to be a voluntary ban on the sale of red lanterns.</i></p> <ul style="list-style-type: none"> Little evidence found. <p>N/A</p>
Coastal rescue services	<ul style="list-style-type: none"> No evidence of any adverse risk. 	
Consumer safety Helium resources	<ul style="list-style-type: none"> Little evidence found. It was not possible to come to a firm conclusion of the impact on helium reserves although increases in the price of helium could have a self-limiting effect. 	

Source: <http://gov.wales/docs/desh/publications/130514sky-lanterns-helium-balloons-assessment-en.pdf> [Visited: 28.3.17].

The two most significant risks identified are fire and impacts on coastal rescue services, which both relate to sky lanterns only. The Maritime and Coastguard Agency reported 347 incidents caused by lanterns in 2009.¹⁸ A more recent serious example is the 2013 Smethwick fire believed to have caused by a sky lantern. The fire - described as the largest seen in the West Midlands - involved 100,000 tonnes of plastic, which produced a 6,000-foot smoke plume and required more than 200 fire fighters to keep under control.¹⁹ A total of 11 firefighters were injured and the damage costed £6 million.²⁰

Fireworks

In 2013, a total of £40 million was spent on fireworks in the UK, with 20 million people estimated to have attended a fireworks display.²¹ This equates to £2 million in Wales, with 1 million people - roughly a third of the population - attending a display.

In 2007-08, Keep Wales Tidy undertook a Street Cleanliness Survey of one local authority during the days immediately following Bonfire Night (November 7, 8, 9, 12, 13, 14 and 15) and found fireworks litter present on 19% of streets.²² While staff would not observe any fireworks litter on Welsh streets during most of the year, this example shows that following peak firework events, this litter type is significant. Large events can be particularly problematic. In 2009, Bournemouth attempted to break a world record by setting off over 100,000 fireworks in one minute, but as a result thousands of fireworks littered the beach.²³

Fireworks contain two main components – the explosive (gunpowder), which propels it into the sky, and metal salts (different metals produce different colours), which produce the effects.²⁴ These are enclosed in a paper or plastic shell casing and are attached to a (usually wooden) stick.

Unfortunately, this means that their fallout and litter contain materials which have serious consequences for not only the air, but also soil and water. This is particularly important when we consider that like all litter, fireworks often find their way into watercourses. In Oklahoma, for example, fireworks increased salt levels in one lake up to a factor of 1,000, a level exceeding many states' maximum allowable levels for drinking water, and it took between 20 and 80 days for the levels to return to normal.²⁵ Firework by-products are also linked to acid rain.²⁶

As well as their environmental impacts, fireworks also have alarming health hazards. In 2011, American clinical toxicologist Rose Soloway warned that fireworks were poisonous if swallowed by humans or pets.²⁷ In addition, fireworks '*...often contain carcinogenic or hormone-disrupting substances... not to mention the lung-clogging smoke they release...*'²⁸ .

Spotlight On: Health Implications of Air Pollution Caused by Fireworks

The level of particles in the air from fireworks have caused concerns in many places, including:

- London, where pollution levels have reached a *'very high'* threshold.²⁹
- Munich, where *'dangerously high'* levels of pollution has prompted environmentalists to call for a restriction on the private sale of fireworks.³⁰
- Nebraska (USA), where fireworks caused the Air Quality Index to reach a level which was *'Unhealthy for Sensitive Groups'*, leading to health warnings being issued after fears that they *'...may cause breathing to be difficult for individuals with asthma or other lung or heart disease, the elderly, very young children, and pregnant women.'*³¹
- India, where fireworks during the festival of Diwali have been linked to increases of between 30% and 40% in breathing problems recorded.³² Levels of barium in the air (a metal used to create green coloured effects and is believed to cause respiratory problems), increased 1,000 times in one study in India following Diwali fireworks.³³ Barium can also interfere with the function of the heart.³⁴

In addition, exposure to fireworks is particularly harmful to foetuses, as when ingested, their salts are *'...absorbed by the thyroid gland in place of iodine, which can interfere with the production of thyroid hormone, an essential part of metabolism and mental development.'*³⁵

In recent years, scientists have been developing eco-friendly fireworks, that are free of salts and contain significantly lower levels of barium, which produce only stable gasses and cut down on small particles – however, while being cleaner and safer, they're unfortunately also more expensive than traditional fireworks.³⁶

The more widely-documented impacts of fireworks are summarised below.

Safety	Noise
<ul style="list-style-type: none">• Fires: there's a risk of fires when embers land on barns or in fields, which is heightened in the summer when crops are dry.³⁷ People and property are also at risk, with an average of 127 fires in homes and buildings started by fireworks in the UK every year.³⁸• Accidents: in 2014-15, 15 emergency hospital admissions were recorded in Wales relating to the discharge of fireworks (all were males under the age of 60).³⁹ The figures for England and Scotland were 4,506 and 9, respectively.⁴⁰ However, the number of firework-related injuries each year in Britain is much higher, with the Health and Safety Executive using a figure of <i>'around a thousand people'</i>,⁴¹ and the BBC stating that <i>'...every year, several thousands of people in Britain are hurt by fireworks'</i>⁴². Fireworks accidents can be fatal, with 2 fireworks-related deaths in England in one weekend in 1996.⁴³ The Royal Society for the Prevention of Accidents has a Firework Code and advises that large public displays are the safest places to enjoy fireworks.⁴⁴	<ul style="list-style-type: none">• Livestock and poultry: the NFU states that when livestock are frightened, it can <i>'...lead to lower production and even stock loss. Poultry especially are at risk of a "smother," where birds huddle together which can result in some birds dying.'</i>⁴⁵• Domestic pets: many dogs are frightened by fireworks with as many as half dog owners reporting signs of fear and anxiety when fireworks are set off.⁴⁶ However, they <i>'...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.'</i>⁴⁷ Sadly, the impacts can even be fatal (see example below). There is concern amongst the public about the impact of fireworks on animals, and the Royal Society for the Prevention of Cruelty to Animals (RSPCA) receives hundreds of calls each year - for example, 386 calls were made to them about the issue in 2015, an increase of 34% on the 2011 figure.⁴⁸ They would like to see the public sale of fireworks restricted to traditional dates only, a reduction in noise levels to 95 decibels (with better noise labelling) and information displayed locally on licensed public displays so that the public can appeal

licences (with this process also in place for private displays too).⁴⁹

- Wildlife: although direct evidence is limited, noise from fireworks is also likely to cause distress to wildlife, including waterfowl.⁵⁰

Interventions and Solutions

Guidelines

Guidelines exist for the use of balloons, sky lanterns and fireworks. These are outlined in the table below.

Balloons ⁵¹	Sky Lanterns ⁵²	Fireworks ⁵³
<p>1. Only natural latex rubber balloons will be used for releases (thereby distinguishing between latex and foil 'Mylar' balloons).</p> <p>2. All components used in balloon releases must be biodegradable (including a recommendation against plastic valves inside balloons).</p> <p>3. Only helium gas should be used to inflate the balloons (thereby aiding the explosion of the balloon into smaller fragments which decompose more easily).</p> <p>4. No ribbons or strings must be attached to the balloons.</p> <p>5. Balloons must always be launched singly (as opposed to tied bunches).</p> <p>6. Full approval must be obtained from the relevant authorities (particularly in relation to releases of over 5000 balloons, which require the clearance of air traffic control).</p> <p>7. Maximum balloon size (including a recommendation against releasing balloons larger than 12").</p> <p>8. All balloons sold near balloon releases must be weighted (so that they cannot escape accidentally).</p>	<p>1. Any individual or group releasing more than ten sky lanterns should contact the CAA prior to release.</p> <p>2. Any individual or group releasing ten sky lanterns or less at a release site ten nautical miles or less from an airfield – the EO should contact the Air Traffic Control (ATC) organisation of that airfield.</p> <p>3. Any individual or group releasing ten sky lanterns or less at a release site more than ten nautical miles from the nearest airfield – contact with the CAA/ATC is not required.</p> <p>4. Sky lanterns are not to be tied together.</p> <p>5. If the sky lantern release is planned to take place on or near the coast, the organiser should pass all the relevant details to their local HM Coastguard prior to the event.</p>	<p>1. Plan your firework display to make it safe and enjoyable.</p> <p>2. Keep fireworks in a closed box and use them one at a time.</p> <p>3. Read and follow the instructions on each firework using a torch if necessary.</p> <p>4. Light the firework at arm's length with a taper and stand well back.</p> <p>5. Keep naked flames, including cigarettes, away from fireworks.</p> <p>6. Never return to a firework once it has been lit.</p> <p>7. Don't put fireworks in pockets and never throw them.</p> <p>8. Direct any rocket fireworks well away from spectators.</p> <p>9. Never use paraffin or petrol on a bonfire.</p> <p>10. Make sure that the fire is out and surroundings are made safe before leaving.</p>

The guidelines for balloon and sky lantern releases are from the National Association of Balloon Artists and Suppliers (NABAS) – the Balloon and Party Professionals Association. The guidelines code of conduct acknowledges the potential environmental risks and Keep Wales Tidy recognise that they contain some important steps towards mitigating the environmental impact of balloon releases. Keep Wales Tidy would not agree with the third point in the balloon guidelines, which states that only helium should be used to fill balloons. The reason for this is that helium, which is formed by the decay of radioactive rocks,⁵⁴ is non-renewable⁵⁵.

The code is entirely voluntary, and it is unlikely that all who release balloons and sky lanterns into the environment are aware of the code not to mention whether or not they follow the guidelines. Moreover, independent research has identified inconsistencies between Civil Aviation Authority guidelines⁵⁶ and the information provided on some products (see table above).

While also voluntary, the firework guidelines, which are provided by The Royal Society for the Prevention of Accidents (ROSPA), are sponsored by the government⁵⁷. Although many are likely to be unaware of the code, advice on fireworks safety is widely promoted in campaigns (see example below). Government advice for communities state that cases must be collected after use⁵⁸, while their guidance for organised events adds that metal litter bins should be available⁵⁹.

The Health and Safety Executive also has various guidelines relating to organising firework displays, for novices⁶⁰ as well as for display organisers and operators⁶¹, which all include advice to carefully check and clear the site the morning after.

In addition to these guidance documents, local authority terms and conditions for those holding events on land owned and managed by the council can stipulate that the area is cleaned⁶². Specifically related to fireworks, they may also choose to only allow professional pyrotechnic operators to run fireworks displays.⁶³ The National Outdoor Events Association's code of practice states that members (who cover festival and event organisers) *'Provide and maintain the highest possible standards of health, safety, cleanliness and presentation.'*⁶⁴

Campaigns to Raise Awareness and Change Behaviour

Campaigns can be a very effective way of educating and changing behaviour, particularly when several like-minded organisations join forces in partnership.

Spotlight On: The All Wales Campaign Against the Intentional Release of Balloons and Sky Lanterns

In June 2011, pupils from Green Flag Eco-Schools across Cardiff met for the Cardiff Eco-Committee meeting. Part of the day involved identifying something that they would like to change in Wales. The pupils decided that they didn't like the problems caused by litter from balloons and that they would like to try and change the law in Wales. This led to the two specific actions led by Keep Wales Tidy, described below.

- The following e-petition was submitted to the National Assembly for Wales on behalf of the Eco-Schools pupils in March 2012.

*'We call upon the National Assembly for Wales to urge the Welsh Government to legislate against the intentional release of balloons and Chinese (or Air) lanterns into the air.'*⁶⁵

Input into the petition's supporting evidence was provided by The Marine Conservation Society. The petition, which stayed on-line for two months, received 564 signatures from across Wales and beyond.

- Schools and other organisations were asked to sign the following pledge as part of the Don't Let Go Campaign, which was also publicised by The Marine Conservation Society and Cardiff Council.

We _____ (school/organisation name) recognise the damage caused to wildlife and the environment by balloons and Chinese lanterns and therefore pledge to NOT organise or undertake a balloon or lantern release from now onwards.

We are happy / not happy (delete as appropriate) for our organisation's name to appear on the Keep Wales Tidy Website as inspiration to others.

From

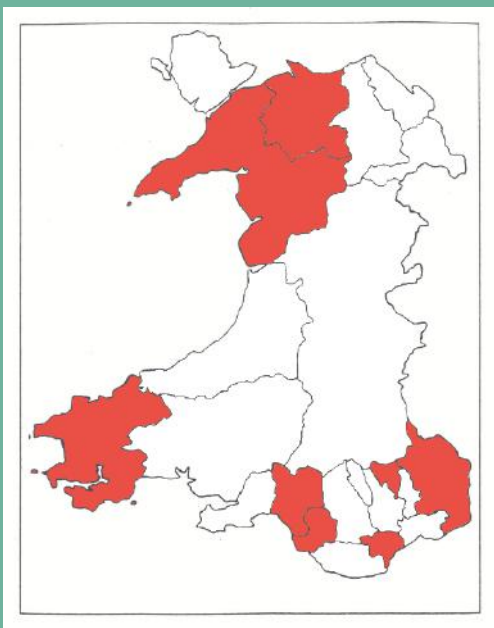
(Head teacher or CEO of organisation should send or authorise this email)

Around 70 organisations from across Wales made the pledge, including schools and town/community councils. Schools from 15 local authority areas signed the pledge, including English and Welsh schools and from nurseries through to high schools. In exchange, a poster was sent to schools along with material intended to be distributed locally. Input from external partners was key: The Marine Conservation Society provided evidence, text and promotional input, whilst Cardiff Council provided artwork and printing. The website and promotional materials (posters and information post-cards) were key to keeping the issue in the public interest.

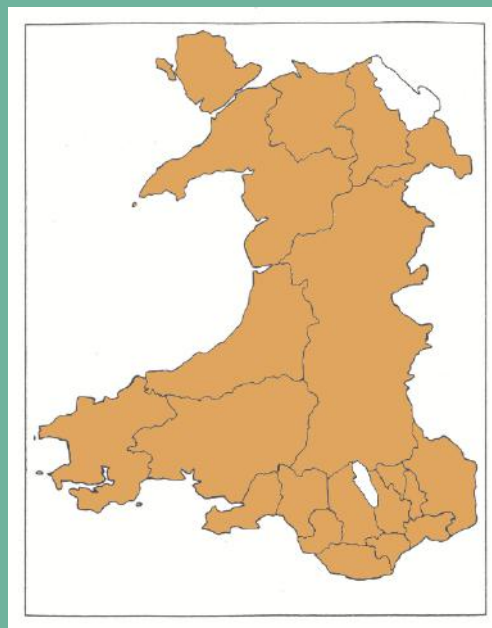
As a result of the petition, the Welsh Government commissioned a detailed report into the impact of balloon and lantern releases. This was carried out in conjunction with DEFRA and was completed in the Spring of 2013 (see Research into the Impacts of Helium Balloons and Sky Lanterns box). The Minister for Natural Resources made a written statement on the release of the report, in which he said: *"I remain concerned about the issue and will continue to work closely with our partners, in particular Keep Wales Tidy, to ensure that impacts of sky lanterns and helium balloons are minimised."*⁶⁶

While the findings didn't justify a change to the law, the report led to the Minister for Natural Resources writing to all local authorities in October 2013, urging them to implement a voluntary ban on the release of balloons and sky lanterns from council land/buildings.⁶⁷ The maps below show the latest situation across Wales.

Voluntary Bans on the Release of Balloons^{68, 69}



Voluntary Bans on the Release of Sky Lanterns^{70, 71}



To date, eight local authorities have imposed a voluntary ban on the release of balloons, and 20 have done so for sky lanterns. Monmouthshire has gone a step further, by '*...seeking a voluntary prohibition of release of sky lanterns and mass balloons from private venues, for example hotels, whilst conducting their proactive visits and inspections.*'⁷²

The RSPCA, which is campaigning for a ban on sky lanterns⁷³, has been urging the remaining local authorities to follow suit^{74, 75}. The Marine Conservation Society has taken its 'Don't Let Go' Campaign to a local level by urging the public to pledge their support, hoping that this would lead to bans in the remaining local authorities.⁷⁶ To date, more than 50 local authorities across the UK have joined their campaign and implemented voluntary bans on the release of both balloons and sky lanterns.⁷⁷

The minister also asked that charities consider alternatives for fundraising and awareness raising (see more information on alternative activities below).

Operation BANG (Be a Nice Guy) is a national community safety initiative which started in south Wales in 2004.⁷⁸ Every year, this multi-agency campaign, led by Wales' Fire and Rescue Services and Police Forces is run to promote safe celebrations over the Halloween and Bonfire Night period. Activities which promote personal safety and aim to reduce instances of anti-social behaviour include:

- Encouraging the public to attend official, organised events which are much safer than private displays.⁷⁹
- School talks by Police Community Support Officers about the dangers of fireworks.⁸⁰
- Raising awareness of firework laws.⁸¹

The campaign has been successful in reducing the number of anti-social behaviour incidents, with a reduction from 1,341 in 2010 to 339 in 2013 in Rhondda Cynon Taf alone.⁸²

Legislation

Many countries have banned the use of sky lanterns, including Austria, Australia, Brazil, Germany, Malta, New Zealand, Spain and Vietnam along with parts of Canada and some US states.^{83, 84} Closer to home, they have also been banned from Glastonbury festival.⁸⁵ Despite the National Assembly for Wales' failure to legislate against the intentional release of balloons and sky lanterns, Keep Wales Tidy is encouraged by the voluntary bans which have been adopted widely by local authorities.

We do however, along with The Marine Conservation Society,⁸⁶ consider the intentional release of both balloons and sky lanterns as littering. In Neath Port Talbot, the latest Welsh local authority to introduce a voluntary ban on the release of balloons, those *'...releasing balloons from council-owned land face a fine for littering.'*⁸⁷ The wording of the littering legislation (the Environmental Protection Act 1990 section 87 – Offence of leaving litter) states that *'A person is guilty of an offence if he throws down, drops or otherwise deposits any litter...'*⁸⁸, however, balloons and sky lanterns are *released*, therefore it is unlikely that people consider letting go of these products as littering. Section 27 of The Clean Neighbourhoods and Environment Act 2005 clarified the meaning of litter by specifically mentioning smoking and chewing gum related products.⁸⁹ However, at present, the release of balloons and sky lanterns are not specifically mentioned.

Different countries have taken very different approaches to fireworks legislation. In the Republic of Ireland, the only fireworks that can be legally bought and used by the public are category F1 fireworks (these have a low hazard level, designed for indoor use, such as party poppers, Christmas crackers and some sparklers).⁹⁰ The sale and use of higher hazard category F2, F3 and F4 fireworks such as bangers, rockets and fountains, are restricted – they are only available for use in organised displays by professional operators.⁹¹ In Northern Ireland, new legislation introduced in 2002 made it compulsory for anybody wanting to buy, possess or use fireworks to obtain a licence.⁹² Overall, there has been a sharp drop in injuries across Northern Ireland since this legislation was introduced.⁹³

There are a number of pieces of UK legislation relating to fireworks. The law is summarised below.^{94, 95, 96, 97}

Use of Fireworks	Buying and Selling Fireworks
<ul style="list-style-type: none">It is illegal to carry fireworks if you're under 18 years old.It is an offence to tamper with or modify fireworks.Fireworks (including sparklers) mustn't be set off or thrown in the street or other public spaces.While members of the public can hold private firework displays at any time of the year, they are subject to strict curfews which prevent fireworks being used during the night hours (11pm – 7am) except for:<ul style="list-style-type: none">Bonfire Night (midnight)Diwali, New Year and Chinese New Year (1am)Category 4 fireworks can only be used by professionals.	<ul style="list-style-type: none">Fireworks mustn't be sold to anybody under the age of 18.It is illegal to sell fireworks with a noise level of over 120 decibels to the public.Fireworks (including sparklers) can only be bought from registered sellers for private use on the following dates:<ul style="list-style-type: none">15 October – 10 November26 – 31 December3 days before Diwali and Chinese New YearAt other times, you can only buy fireworks from licenced shops.
<ul style="list-style-type: none">You can be fined up to £5,000 and imprisoned for up to six months for selling or using fireworks illegally. You can also be given an on-the-spot fine of £90.	

There are also several pieces of legislation which can, in theory, be used to tackle noise nuisance, but in practice, the short-lived nature of fireworks noise means that it's difficult to locate the source, and therefore for legal action to be taken.^{98,99}

By law, fireworks are not permitted in sports grounds¹⁰⁰. The lighting of fireworks or other objects are subject to disciplinary action according to the Union of European Football Associations' (UEFA) disciplinary regulations,¹⁰¹ with Celtic recently fined by UEFA over fireworks¹⁰².

Many people in Wales and other parts of the UK feel that tougher fireworks laws are needed and the following petitions have recently been submitted to the governments in Wales and England respectively.

- In 2015, on the basis of risks to people and pets, the National Assembly for Wales was called to ban the sale of fireworks for use by the public so that only licenced events of organised displays could be held (this was signed by 110 people).¹⁰³ Nothing came of the petition because as Leighton Andrews AM wrote to the Chair of the Petitions Committee on 6th January 2016, *'The sale of fireworks is not a devolved matter.'*¹⁰⁴
- In 2016, the UK parliament was called to *'Restrict the use of fireworks to reduce fear and stress in animals and pets'*¹⁰⁵ – which received 104,038 signatures and was debated on 6th June. The Government's official response said there were no plans to extend the restrictions, citing the limitations already in place - including the noise level of fireworks for home use and the fact that suppliers who wish to sell fireworks outside the traditional periods must comply with strict conditions before receiving a licence to do so - which has significantly reduced their availability and use during other periods.¹⁰⁶
- In October 2016, a dog from Carmarthenshire was tragically found washed up on Burry Port beach having ran off after being frightened by fireworks.¹⁰⁷ This led to a petition to the UK parliament, calling to *'Ban the sale of fireworks to the public and only approve organised displays'*¹⁰⁸. Within just a few days, the petition had reached the threshold figure of 100,000 signatures, meaning parliament must consider it for a debate. However, the Petitions Committee didn't debate the issue as the subject had been debated by the House of Commons recently. The Government's official response said that while it acknowledged people's concern in relation to fireworks, they considered that the controls already in place *'...effectively manage and reduce the level of risk posed by the public use of fireworks, and that to bring in further restrictions would be detrimental to an important British tradition reflecting our history and multi-culturalism. There are no plans at the moment to place further limitations on their use.'*¹⁰⁹

Therefore, although tougher laws would likely mitigate the impacts of fireworks, it seems doubtful that there will be any legislative changes in the UK in the near future.

Alternative Activities

While many people recognise the various risks associated with the release of balloons and sky lanterns and the use of fireworks, they also acknowledge that these materials do create spectacular displays. Therefore, a number of organisations promote alternative activities. The table below summarises some of these, as championed by Keep Wales Tidy, The Marine Conservation Society,¹¹⁰ the RSPCA,¹¹¹ the World Animal Foundation¹¹² and others¹¹³.

Balloon Release Alternatives	Sky Lantern Alternatives	Fireworks Alternatives	Fundraising Alternatives	Memorial Alternatives
<ul style="list-style-type: none"> • Balloon sculptures • Balloon relay • Pop a balloon • How many balloons in a car? • Virtual balloons and races (launched by RSPB) • Float flowers or flower petals on a stream or lake • Fly a kite 	<ul style="list-style-type: none"> • Flags, banners and pop-ups • Stationary candles or nightlights • Static lanterns or outdoor lights 	<ul style="list-style-type: none"> • Laser light show • Street party • Star gazing • Outdoor film • Community drumming • Indoor firework projectors • Electronic firework displays • Electronic pyrotechnics 	<ul style="list-style-type: none"> • School fete • Cake sale • Fun run • Football tournament • Family fun day • Treasure hunt • Fancy dress day • Dance off • Farmers market • Penny trail • Raffle • Sports day • Bouncy castle • Joke off • Face painting 	<ul style="list-style-type: none"> • Light a candle • Blow bubbles • A minute's applause • Plant a tree

The Marine Conservation Society believes that any balloons used indoors should be filled with air rather than helium, as any balloons accidentally released wouldn't travel as far and because helium is a limited resource.¹¹⁴

Conclusion

Releasing balloons and sky lanterns and using fireworks, create displays which are enjoyed by many across the country. However, their visual spectacle is short lived, while their negative impacts have far reaching and long lasting effects on people, animals and the environment.

It is unlikely that there will be any major changes to legislation in relation to any of these products in the near future. Raising awareness and community engagement as well as multi-agency campaigns have proved to be successful in changing both behaviour and policy.

However, these issues continue to pose a threat, and more needs to be done to minimise their use and impact. Working in partnership will be essential if we are to move forward. We support those local authorities in Wales which have taken positive steps by introducing voluntary bans on the release of balloons and sky lanterns. If the remaining local authorities follow suit, Wales could become the first Airborne Litter Free nation in the UK.

Policy Link

[UK Legislation](#)

[Sky Lanterns and Helium Balloons: An Assessment of Impacts on Livestock and the Environment](#)

Recommended Actions

Wales to Become the First Airborne Litter Free Nation in the UK

A number of influential organisations have campaigned on the issue of mass releases of balloons and sky lanterns, which has drummed up support nationwide. As a result, many local authorities have already implemented voluntary bans on the mass release of balloons and sky lanterns. Since the larger events tend to happen on public land, (with private land more likely to involve smaller scale domestic events), these bans are likely to have a significant impact. Keep Wales Tidy and others can continue to encourage more local authorities to implement voluntary bans, and Wales could become the first Airborne Litter Free Nation in the UK. It is also important that partners such as charities, schools, registered social landlords as well as local authorities are engaged with this agenda so that they can make more informed decisions about their use of these items.

Monitoring

In the past, Keep Wales Tidy has collected data on balloon litter across Wales as part of our street cleanliness surveys. We have also collected fireworks litter data in local authorities whose surveys fall around the time of Bonfire Night.

Unfortunately, it is difficult to get a full picture of the extent of sky lanterns litter because consumers have no control on where they land, and the likelihood of them landing on streets, where Keep Wales Tidy undertake its surveys, is fairly slim. As fireworks casing falls to the ground much closer to where they're set off, and considering the domestic use of fireworks remains popular, street cleanliness surveys are likely to give a better indication of the extent of this type of litter. However, getting a national picture of fireworks litter is also difficult as we undertake surveys during much of the year, while major national fireworks events tend to be more limited to a few peak periods. One of these is New Year, a bank holiday, when surveys are not undertaken.

Having data is key to understanding the issue and monitoring the impact of any action taken. In 2017-18, as part of our street cleanliness surveys, Keep Wales Tidy will collect data on:

- Balloon litter throughout Wales.
- Firework litter for surveys in local authorities taking place during November.

Research

Research is very important in informing us of the impacts of our actions. However, there are currently gaps in our knowledge, some of which were identified by the research commissioned by DEFRA and the Welsh Government. Examples of areas where more research is needed include:

- Impact on livestock, animal health and marine animals, particularly in relation to balloon releases.
- The time it takes for balloons to decompose – this is a very important factor in understanding the impact of balloons, yet is currently inconclusive. Getting a full understanding of this is likely to be a key factor in the future use of balloons, which are perceived to be biodegradable, as publicised by

the industry: *'The balloon industry's defence is that latex is biodegradable [sic] and takes about the same time as an oak leaf to decompose, although they fail to point out this could take several years – and an animal is unlikely to be harmed by the consumption of an oak leaf.'*¹¹⁵

- The impact of fireworks on air quality – this is particularly significant because of the implications on health.
- Scale of the problem nationally – street and beach cleanliness surveys only show part of the picture, and of the 3 products, Beachwatch surveys currently only specifically categorise balloon litter. There are some isolated examples of landowners monitoring sky lanterns on their land, e.g. a farmer from the Wirral who found 57 on her farm one morning¹¹⁶, and farmers in Denbighshire and Flintshire undertaking lantern patrols¹¹⁷, but our understanding on the scale of the issue is currently far from complete.

Education and Campaigns

The success of Keep Wales Tidy's partnership campaign asking schools and organisations to pledge not to release balloons and sky lanterns proves that information and awareness can go a long way to affecting behaviour change. Moreover, even where schools haven't made a pledge, where their relevant local authorities have implemented a voluntary ban, this would cover the schools in that local authority.

This is a good start, yet more needs to be done, particularly in areas where local authorities have been slow to act. Campaigns on such important issues should be on-going, where schools, other organisations and the public at large learn of the impacts of these products to enable them to make more informed decisions on their actions and where they can continue to pledge not to participate in releases.

Campaigns which highlight the issue, its impacts and consequences are valuable. Examples of possible campaigns identified by independent research and this paper include:

- Promote users to follow guidelines for product use (for all 3 product types).
- Discourage the use of red sky lanterns.

Behaviour change in these areas would improve safety and reduce potential negative impacts.

In terms of fireworks displays, since public displays which are run professionally are both safer for the public and can be regulated by the authorities in terms of litter left behind, these are preferred over domestic ones. Education and campaigns should continue to promote these organised events. However, with the austerity of recent years, it's been reported that public firework displays are being scaled down or even called off altogether,¹¹⁸ which is likely to lead to more home displays which are more prone to risk and are unregulated. Therefore, campaigns should also promote the importance of safely clearing up after domestic events. Alternatively, the private sector, such as local businesses, retail parks and Business Improvement Districts could be encouraged to sponsor organised events.

Moreover, the alternative activities to using all 3 products should also be widely promoted along with the reasons why these activities are better.

Legislation, Enforcement and Lobbying

Despite widespread concern relating to the negative impacts of these products and fear about the dangers associated with them, a change in law relating to the release of balloons, sky lanterns or the use of fireworks seems unlikely. However, given the contribution of fireworks to issues of air pollution, currently an increasing public health priority, it is very likely that their sale and use will be brought into question again in the near future.

Keep Wales Tidy considers the intentional release of balloons or sky lanterns to be a form of littering, and believes that their release should be treated as so in both legislative and enforcement terms. Littering legislation has clarified products designed for smoking and chewing as litter, and local authorities issue fixed penalty notices when these items are littered. Having balloons and sky lanterns treated in the same way legally would send out a strong message to consumers.

Since independent research has identified problems in relation to consumer information, there is also a place to call for improved information which falls in line with guidelines as well as better labelling (e.g. in relation to fireworks noise levels). This would allow consumers to make more informed decisions on the products they purchase.

Review

It is beneficial to keep up to date with the latest information in relation to these products, their use, and action taken to mitigate their impact. Keep Wales Tidy will continue to review the situation in Wales and beyond as appropriate.

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