

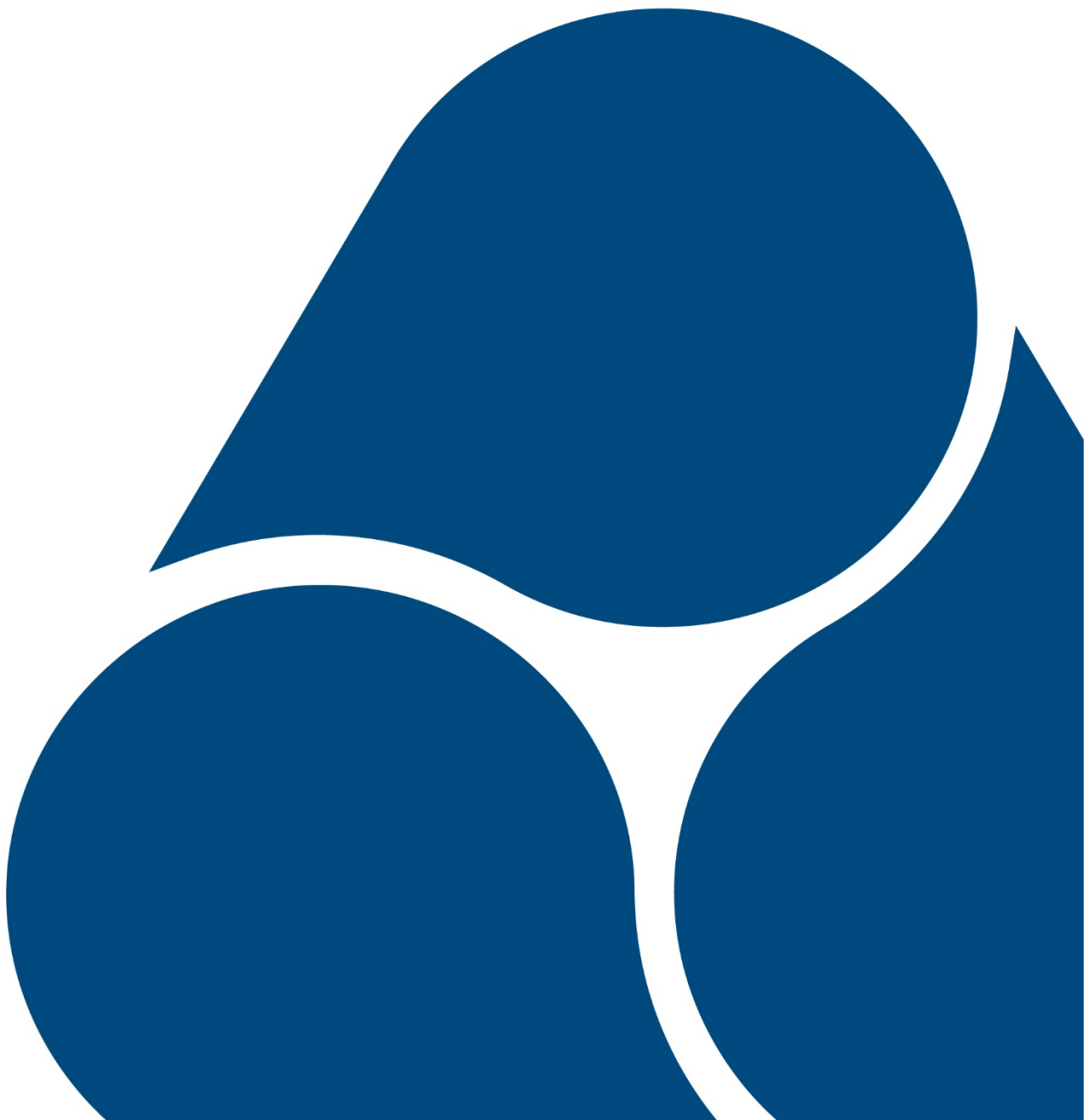


Office for Product
Safety & Standards

Open Source Monitoring – Fireworks

Comparing December 2018 – January 2019 with
December 2019 – January 2020

January 2020



Open Source Monitoring – Fireworks

Covering December 2018 – January 2019 and December 2019 – January 2020

Executive Summary

This report examines comparative rates of online discussion for the fireworks periods in 2018-19 with 2019-20. It is designed to gather a flavour of the global discussion around the issues and concerns about the use of fireworks, which covers topics such as displays, public nuisance, bans, the environment, pets and animals. The findings suggest an increase in the latest period (up by almost 18%) of general discussion about the topic, with the number of messages related to “ban” almost 3x times higher. However, any discussion around bans needs to be placed in context, representing a small percentage of the overall number of messages related to fireworks.

1. Rationale

- 1.1 The OPSS Intelligence Unit has analysed Twitter and other social media by building up queries and definitions. Using the search terms, “fireworks”, “display”, “ban” and other query terms such as “animals”, “safety”, “nuisance”, we looked to examine any incidents of messages related to fireworks and fireworks displays being potentially advertised, reported or discussed on open source media platforms. This is to provide information from open source research to the Fireworks Evidence Base. Research by the Intelligence Unit was completed on 16 January 2020 for the period(s) stated above and revised in July 2020.

2. Methodology

- 2.1 **Fireworks** The purpose of this exercise is to identify themes and issues arising from similar periods in as we entered the “fireworks season”, i.e. a period identified with Guy Fawkes’ Night (Bonfire Night), Diwali, Halloween and other festivals and celebrations covering October and November. This report supplements that work to compare any trends or themes arising covering Christmas, New Year’s Eve and other festive and seasonal related celebrations. For ease of reference, these will be denoted as Christmas/New Year for the purposes of this report. The previous reports provide the context and this latest research compares rates of returns against the same themes.
- 2.2 An initial search was undertaken using the term “fireworks” covering a roughly 30-day period from **17 December 2018 – 15 January 2019** for which there were 298,608 “hits” indicating a spike around 30 December 2018 – 2 January 2019 (195,135 hits) concerning various global firework events to mark the New Year.
- 2.3 The latest search return on fireworks for the similar period **17 December 2019 – 16 January 2020** indicates 343,948 “hits” with a spike around 30 December 2019 - 2 January 2020 (228,078 hits) concerning various global firework events to mark the New Year as well as concerns over safety of human and animal health. In both instances, this equated to approximately two-thirds of all messages for the periods researched.
- 2.4 Given this total would be too great to analyse, searches were refined against additional search terms and the dates narrowed to cover the Christmas and New Year periods from 23 December – 2 January. These indicate the main themes of discussion arising under the main topic of fireworks, e.g. these indicated a series of Twitter activity pre and post-Christmas and New Year, which are analysed more closely in the following sections.

- 2.5 **Fireworks: key words** Searches were conducted using additional terms, e.g. “ban”, “anti-social” and “injury” to focus on topics of interest and identify any open source activity and discussion (*Table 1 refers*). This involved using the term “fireworks” with other words and terms for messages of interest to compare the one-month period in 2018-2019 with the current discussion covering fireworks.

3. Findings

- 3.1 **Summary** the rates of online activity linked to fireworks and associated search terms for the December – January periods suggest an increase of c. 18% in online discussion of the selected search terms, i.e. 253,530 increasing to 298,221. There are similar figures for the online discussion of “displays”; 9,447 for 2018-19 and 9,766 for the period 23 December 2019 – 2 January 2020. The headline figures suggest that issues around “pets”, “buy” and “online” are broadly similar. The number of messages related to “ban” is almost x3 higher for the latest period 3,019 hits compared to 1,009 hits for 2018-19, with messages related to “animals”, “pollution” and the “environment” higher for the latest period. It can be noted that there is a 100% increase in messages related to injury (see Table 1). Issues over litter are higher for the 2018-19 period than for the current/latest period, i.e. 43 – 9. A table comparing all the returns from the searches is at paragraph 4.3 to this report.

Analysis

- 3.2 **“Fireworks”** When comparing the headline figures for the two periods, there are approximately 39,000 more hits within the 2019-20 period than the 2018-19 Christmas and New Year period. Similarly, there is an increase of online activity related to discussion of fireworks and the associated search terms used for this study when comparing the other periods researched. The return of 298,000 hits for the latest period is over 100% higher than that for the period 1-7 November 2019.

Search Term	23 Dec 2018 - 2 Jan 2019	23 Dec 2019 - 2 Jan 2020
“Fireworks”	235,542	274,525
“display”	9,447	9,762
“animals”	1,940	3,842
“ban”	1,009	3,019
“pets”	2,637	2,422
“buy”	1,194	1,392
“pollution”	614	1,203
“environment”	488	1,169
“online”	488	618
“injury”	85	171
“nuisance”	35	63
“anti-social”	8	22
“litter”	43	9
Totals	253,530	298,217

Table 1 to indicate number of returns using each search term as a comparison

3.3 **“Display”** The search term used in the same period for 2018-19 returned 9,447 hits related to people discussing various displays in different countries with emphasis on the London display and its supposed “politicisation” regarding the UK leaving the EU. These are predominantly positive in terms of the poster(s) acknowledging the spectacle of a particular display. The most recent search returns cover various events being organised in different countries as part of festivities with a corresponding rate of return of 9,762 hits.

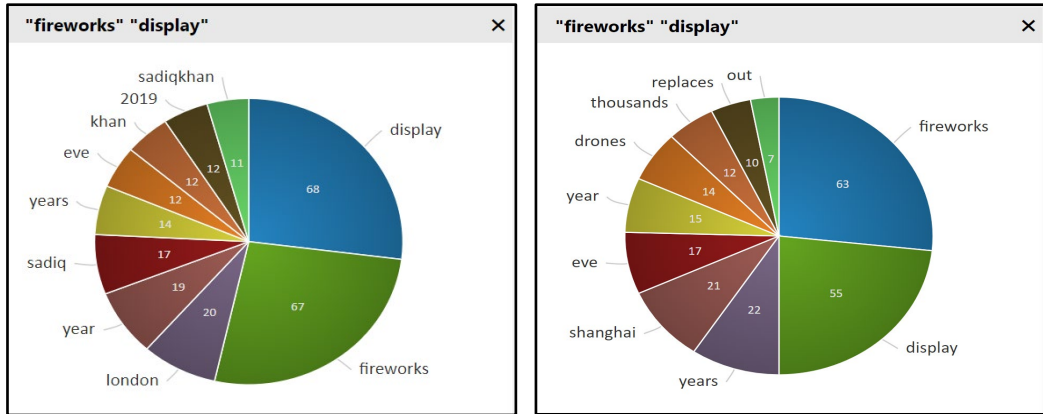


Figure 3 23 Dec 2018 – 2 Jan 2019 **Figure 4** 23 Dec 2019 – 2 Jan 2020

3.4 **“Ban”** The search term fireworks and ban returned 1,009 messages for the Christmas/New Year period 2018/19 up by 200% to 3,019 for the corresponding period for 2019/20 calling on a total ban on selling fireworks for personal use.

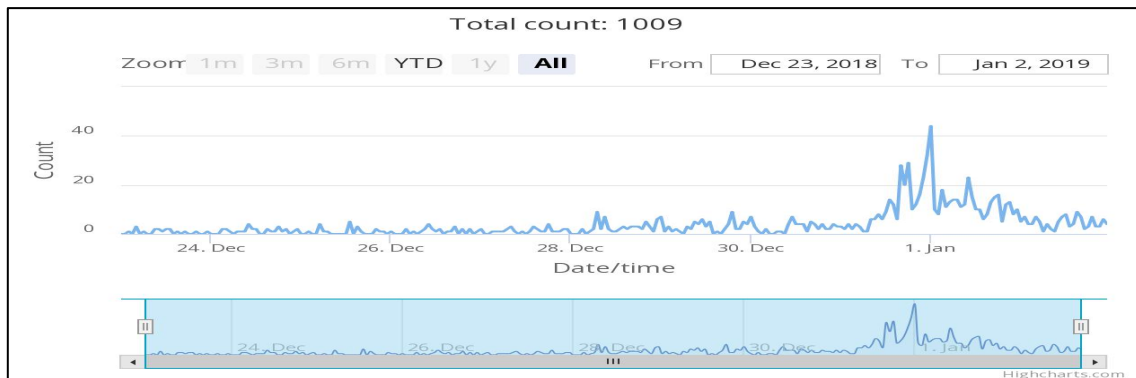


Figure 5 number of message alerts related to “fireworks” and “ban” 23 Dec 2018 – 2 Jan 2019

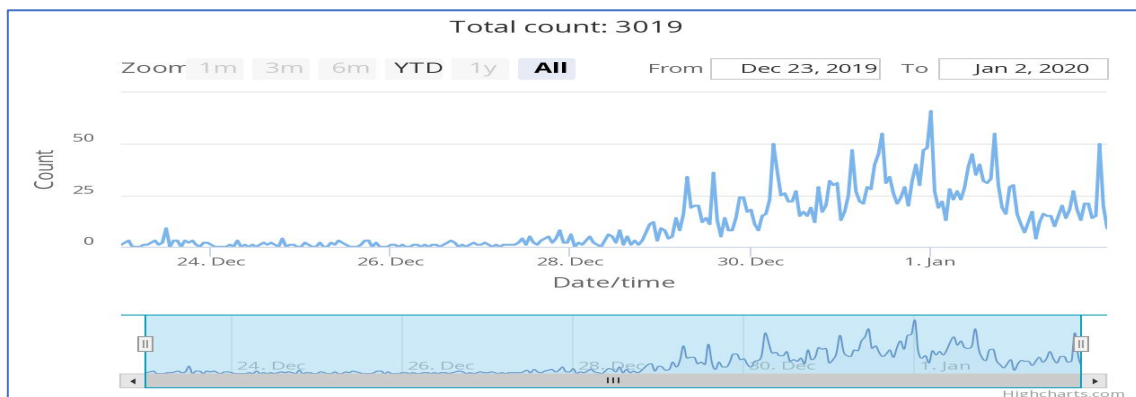


Figure 6 number of message alerts related to “fireworks” and “ban” 23 Dec 2019 – 2 Jan 2020

3.5 **“Animals”** there were 1,940 “hits” for this term over Christmas/New Year 2018/19, almost doubling to 3,842 for the latest period of monitoring 2019/20. These were symptomatic of global concerns with people calling for changes to fireworks regulation to restrict their use to prevent distress to wild and domestic animals.

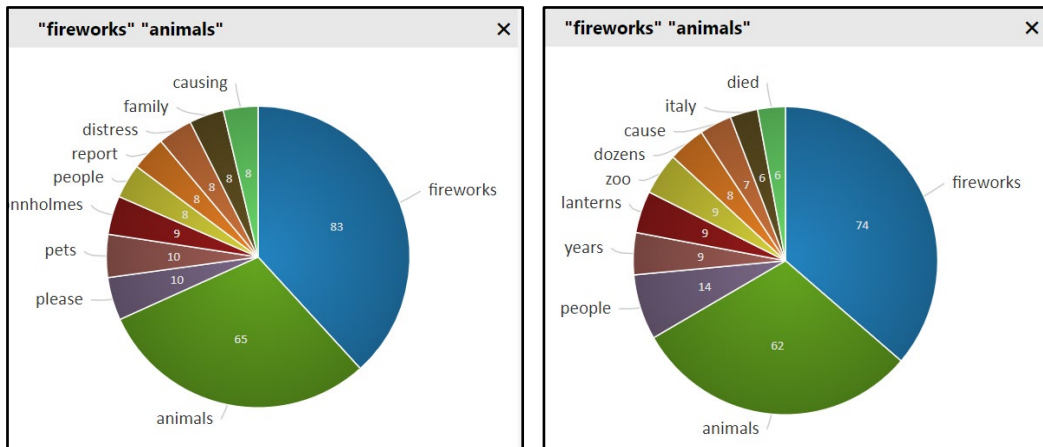


Figure 7 23 Dec 2018 – 2 Jan 2019 **Figure 8** 23 Dec 2019 – 2 Jan 2020

3.6 **“Pets”** returns (2,637 and 2,422 respectively) for this search and as for “animals” in the corresponding period covers comparable examples of distress and means to calm anxious pets. There are emotive discussions around the problems experienced by domestic animals and alternatives such as silent fireworks and drone displays to alleviate the problems of noise and disruption.

3.7 **“Anti-social”** There were x8 and x22 returns for the comparative periods covering contributor’s concerns about setting off fireworks indiscriminately and the availability of (illegal) fireworks. Whilst there is discussion of anti-social behaviour by members of the public online there are no specific reports, e.g. by the Police or other authorities.

3.8 **“Online”, “buy” and “Underage”** searches for the 2018/19 period covered by this report saw x488, 1,194 and 7 hits respectively for each term, which covered sale of fireworks. Similarly, the search terms “buy” returned 1,392 hits for the 2019/20 period and 618 messages for “online” and 9 for “underage” suggesting a slight increase in concerns over the purchasing of fireworks and their availability to the public.

3.9 **“Injury”** Whilst there are no specific incidents of reported injury for the 2018/19 Christmas and New Year period in the UK, the 2019/20 reports an incident that left a British man dead in Thailand due to a firework related incident. There are reports from the Philippines about their injury data; but principally, messages emphasise the unsafe nature of fireworks and highlight the need to use them safely.

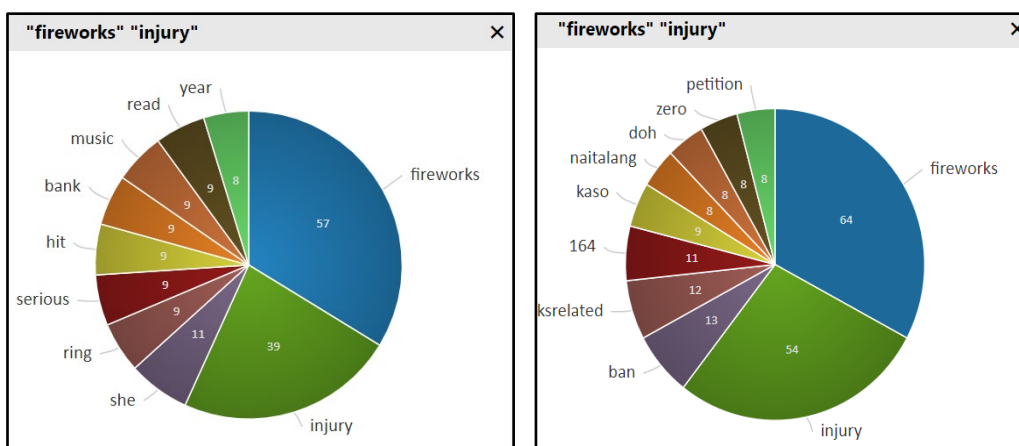


Figure 9 23 Dec 2018 – 2 Jan 2019 **Figure 10** 23 Dec 2019 – 2 Jan 2020

3.10 **“Pollution”** there were 614 hits covering fireworks, noise and air pollution from global sources in the December/January 2018/19 period searched for as part of this report. This rose by c. 100% for the same period covering 2019/20. This appears to highlight increased concerns around the polluting aspects of fireworks caused by smoke and debris, but highlights the contradiction between these concerns and the ongoing celebrations.

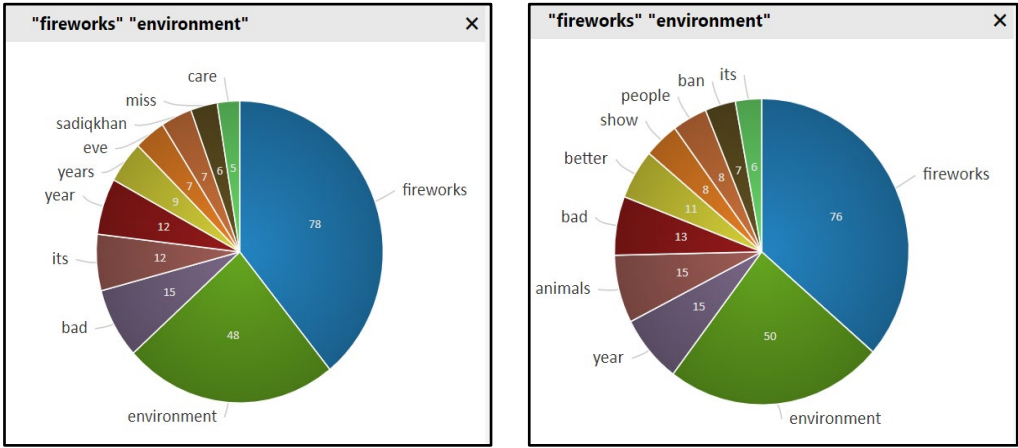


Figure 11 23 Dec 2018 – 2 Jan 2019 **Figure 12** 23 Dec 2019 – 2 Jan 2020

There is a marked increase for the reporting period in 2019/20 covering concerns about the polluting aspects of fireworks with over 1,200 messages. However, whilst some posters mention toxic chemicals inherent in fireworks, there is little supporting scientific evidence in the messages.

3.11 **“Environment”** the increase in online activity for the previous periods of research in November 2018 and 2019 covering global issues around fireworks and residual noise and air pollution is highlighted by the figure of 1,169 hits for the Christmas/New Year 2019/20 period. This represents an approximate 100% higher figure than that for 1-7 November 2019, which was the second highest return covering these searches. The latest figures may be indicative of greater concern about the environmental impacts of fireworks and the need for alternatives to reduce adverse effects, but there is little evidence from these searches to quantify the cumulative hazards and risks globally (Figure 11 and 12 compare themes). Issues over nuisance and litter represent a small amount of the overall discussion around fireworks.

4. Conclusion

4.1 When comparing the two periods using similar search terms for levels of activity and trends for the Christmas/New Year periods indicates slightly increased levels of online discussion activity for the corresponding period in 2019/20 compared to 2018/19. Although, duplicate returns were removed during analysis, there may be crossover between these themes, but indicate increased awareness and online discussion of issues covering animals and pets, pollution and the environment.

Search Term	Total returns using search terms
“Fireworks”	962,495
“display” (and Fireworks)	45,594
“ban”	22,604
“animals”	19,194
“pets”	15,600

	7,736
“pollution”	4,306
“environment”	3,315
“online”	2,798
“injury”	1,217
“nuisance”	547
“anti-social”	406
“litter”	292

Table 2 to indicate total number of returns for each period using each search term

- 4.2 The discussion of fireworks for both Christmas/New Year 2018/19 and 2019/20 are higher than that for the other fireworks’ “seasons” examined by the previous reports. Of over 962,000 messages returned by the cumulative searches, 53% of these are represented by the Christmas/New Year searches for 2018/19 and 2019/20 totalling over 540,000 hits (253,530 and 298,221 respectively).
- 4.3 The discussion of **displays** is fairly consistent for the Bonfire Night/Diwali celebrations (November) compared with the Christmas/New Year period. The discussion on a fireworks **ban** appears to be higher for the 1 - 7 November period in 2018 (6,012 hits) and 2019 (8,473) compared to the December/January monitoring in 2018/19 (x 1,009 hits) and 2019/20 (3,019) representing almost 10,000 more messages around Bonfire Night compared to Christmas/New Year.

Search Term	14 - 21 Oct 2018	21 – 31 Oct 2018	1-7 Nov 2018	23 Dec 18 - 2 Jan 2019	14 - 21 Oct 2019	21 – 31 Oct 2019	1-7 Nov 2019	23 Dec 19 - 2 Jan 2020	Totals
“Fireworks”	22,366	46,582	146,979	235,542	28,741	74,194	133,566	274,525	962,495
“display”	1,253	3,018	9,762	9,447	1,135	3,314	7,903	9,762	45,594
“ban”	246	709	6,012	1,009	848	2,288	8,473	3,019	22604
“animals”	181	785	4,441	1,940	767	1,499	5,739	3,842	19194
“pets”	189	777	3,172	2,637	907	1,365	4,131	2,422	15600
“buy”	212	611	1,423	1,194	411	1,038	1,455	1,392	7736
“pollution”	71	217	443	614	187	862	709	1,203	4306
“environment”	30	102	457	488	106	404	559	1,169	3315
“online”	126	307	422	488	125	329	383	618	2798
“injury”	24	104	405	85	86	79	263	171	1217
“nuisance”	9	26	137	35	42	71	164	63	547
“anti-social”	22	59	44	8	41	77	133	22	406
“litter”	1	18	82	43	16	25	98	9	292
Totals	24,730	53,315	173,779	253,530	33,412	85,545	163,576	298,217	1,086,104

Table 3 Cumulative Totals for all the search terms used in the fireworks research

- 4.4 Similarly, the online discussion of **pets** and **animals** is higher for the November periods in 2018 and 2019 compared to the Christmas/New Year periods representing 53% and 43% of the cumulative total for these themes. This is almost x2 higher than the returns for the December/January periods (see Table 3 N.B. figures in bold are the highest returns for that specific theme).

- 4.5 The greatest increase relates to the discussion of the **environment** and **pollution** within the latest reporting period. Discussion of fireworks and pollution is approximately 1/3 of the total, i.e. 1,203 of 4,306 with environment at 1,169 of 3,315 (c. 35% of the total for this theme). If the total number of messages related to pollution are taken into the grand total this represents less than 1% of all discussion on the selected themes.
- 4.6 Accordingly, any discussion related to a **ban** (22,604 messages) needs to be placed in context globally and within these search parameters represents 2% of all messages returned using the online monitoring application. In summary, the messages regarding environmental and animal concerns are a small percentage of a much broader discussion of fireworks-related discussion and do not appear to be representative of a wider or increasingly concerted campaign (see Figure 14).

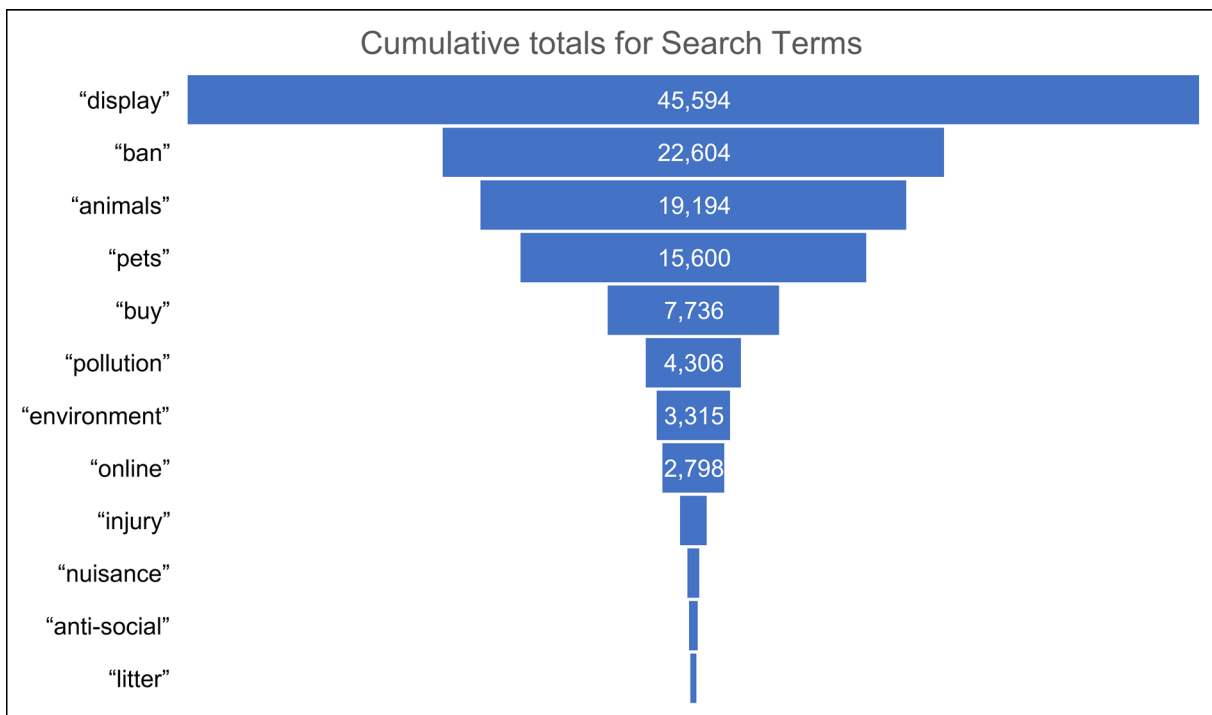


Figure 13 to compare rate of return against each of the search terms for the periods used as part of this research into fireworks.

5. Limitations of this information

- 5.1 The Intelligence Unit has compiled this information using a series of search terms covering a specific period. This produces available information but is not exhaustive and represents a snapshot of open source activity.

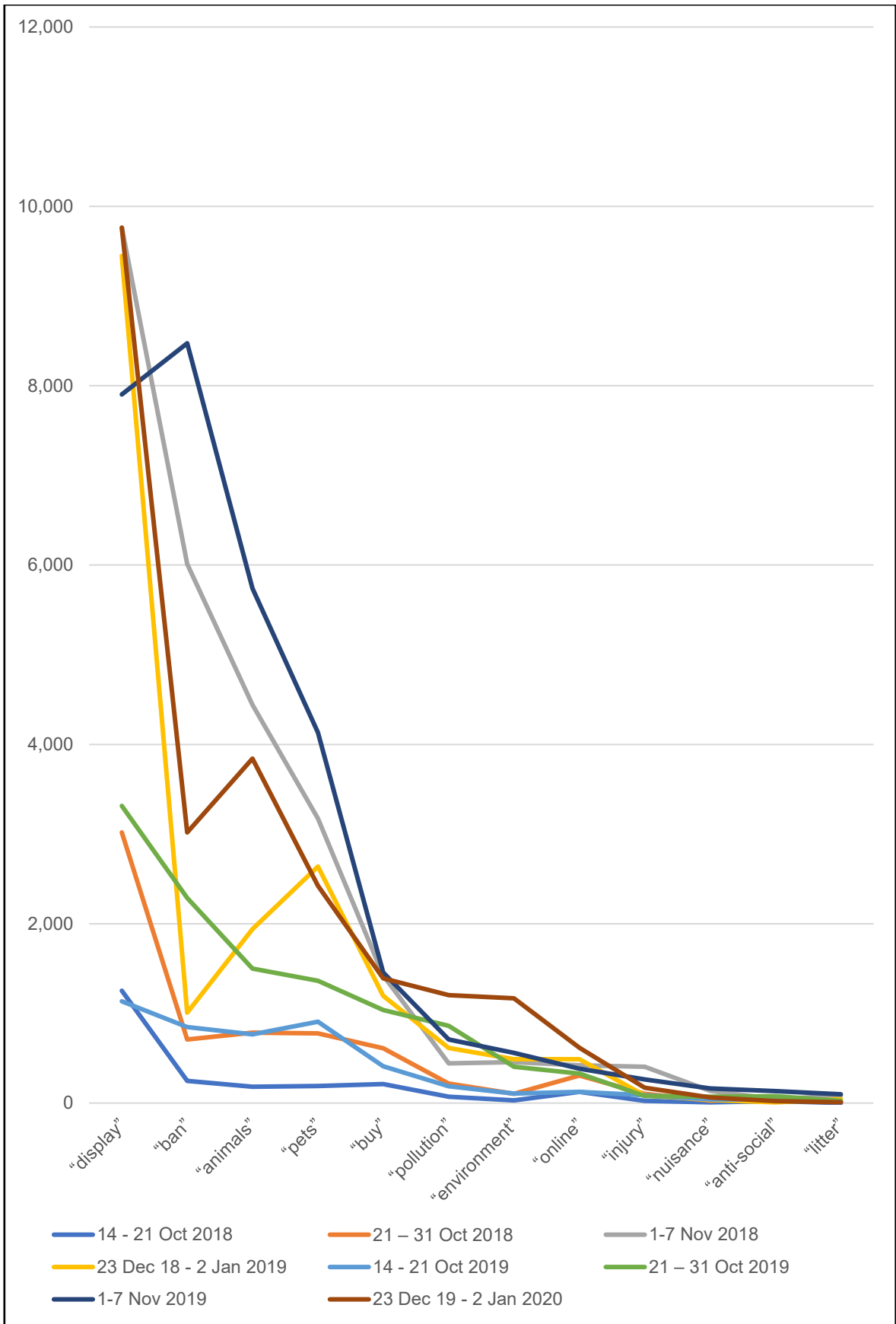


Figure 14 Comparing Search terms from October 2018 – January 2020 reporting periods

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