ystadegau ar gyfer cymru statistics for wales

Statistical Bulletin

Llywodraeth Cymru Welsh Government

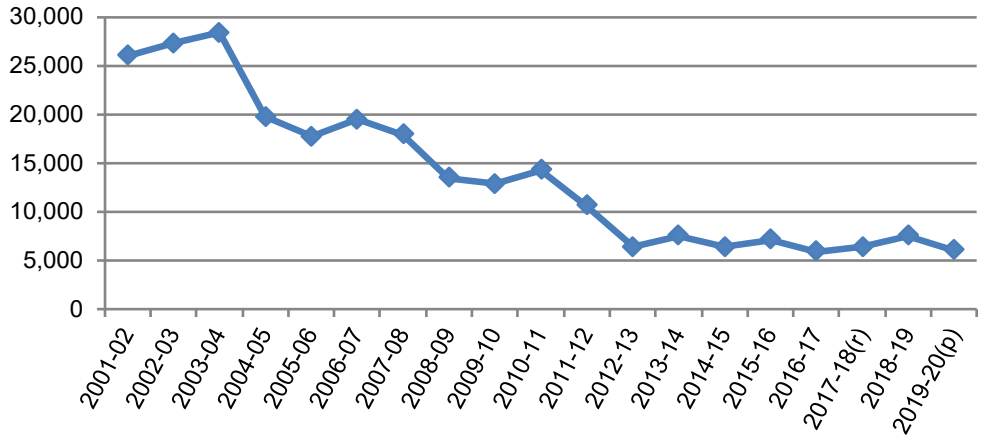
Deliberate fires 2019-20

18 Mar 2021
SB 9/2021

Deliberate fires are those ignited deliberately, or where deliberate ignition is suspected, or those recorded as 'doubtful' by the Fire and Rescue Authority (FRA). In 2019-20, almost 6 in 10 fires attended by the Welsh Fire and Rescue Authorities were deliberate.

The 2019-20 data are currently provisional, extracted from the Incident Recording System (IRS) in September 2020 and may be revised in subsequent publications.

Chart 1 Deliberate fires attended in Wales



The Welsh Fire and Rescue Authorities attended a total of 6,054 deliberate fires in 2019-20. This is a decrease of 20% compared with the previous year but follows two consecutive annual increases. The 2019-20 figure is around a quarter of the number of fires in 2001-02.

Mid and West Wales FRA attended 1,593 deliberate fires in 2019-20.	↓	10% decrease compared with 2018-19
North Wales FRA attended 653 deliberate fires in 2019-20.	→	No percentage change compared with 2018-19
South Wales FRA attended 3,808 deliberate fires in 2019-20.	↓	25% decrease compared with 2018-19

About this bulletin

This biennial bulletin is complementary to data on fire incidents published in November 2020. It examines the impact and patterns in deliberate fires in Wales. The Welsh Government compiles these statistics from reports on all fires attended submitted by all Fire and Rescue Authorities (FRAs) in Wales to the Home Office.

In this bulletin

Fires 4
Road vehicle fires 18
School fires 21
Source and hazardous materials 23
Casualties 26
Prevention 28
Great Britain comparisons 30
Glossary 31
Key quality information 33

Statistician: Scott Clifford ~ 0300 025 6699 ~ stats.inclusion@gov.wales

Enquiries from the press: 0300 025 8099 Public enquiries : 0300 025 5050 Twitter: @StatisticsWales

Contents – Tables and Charts

Chart 1 Deliberate fires attended in Wales 1

All deliberate fires 4

Chart 2: Number of deliberate fires attended, by type 4

Table 1: Number of deliberate fires, by location 5

Chart 3: Number of deliberate primary fires, by location 6

Table 2: Percentage of primary fires started deliberately, by location 6

Table 3: Number and percentage of deliberate fires, by fire and rescue authority 7

Chart 4: Rate of deliberate primary fires per 10,000 population 8

Chart 5: Rate of deliberate secondary fires per 10,000 population 8

Chart 6: Percentage and number of deliberate fires by local authority, 2019-20 9

Fires by month and time of day 13

Table 4: Total deliberate fires, by month 13

Chart 7: Number of primary and secondary deliberate fires, by month, 2019-20 13

Chart 8: Number of deliberate primary fires, by month 14

Chart 9: Number of deliberate secondary fires, by month 14

Table 5: Number and percentage of deliberate primary and secondary fires, by month 15

Chart 10: Total deliberate fires and total hours of sunshine, by month, 2019-20 16

Chart 11: Total deliberate fires and total rainfall, by month, 2019-20 16

Table 6: Number and percentage of deliberate primary and secondary fires, by time of day 17

Chart 12: Number of deliberate primary fires, by time of day and location 2019-20 17

Road vehicle fires 18

Chart 13: Percentage and number of deliberate primary fires in road vehicles 18

Table 7: Number and percentage of deliberate road vehicle fires, by vehicle type 19

Chart 14: Number of deliberate primary fires in road vehicles, by fire and rescue authority 20

Chart 15: Number of deliberate primary fires in road vehicles, by local authority 2019-20 20

School fires 21

Table 8: Number of school fires, by motive and fire and rescue authority 21

Chart 16: Percentage and number of deliberate fires in schools 21

Chart 17: Source of ignition of deliberate primary fires in schools, 2010-11 to 2019-20 22

Chart 18: Deliberate fires started in schools, by room and time, 2010-11 to 2019-20 22

Source and hazardous materials 23

Chart 19: Source of ignition of deliberate primary fires, 2015-16 to 2019-20 23

Chart 20: Materials first ignited in deliberate primary fires, 2015-16 to 2019-20 23

Chart 21: Hazardous materials involved in deliberate primary fires, 2015-16 to 2019-20 24

Chart 22: Dangerous substances in deliberate primary fires, 2015-16 to 2019-20 25

Chart 23: Materials causing explosions in deliberate primary fires, 2015-16 to 2019-20 25

Casualties **26**
Table 9: Number of casualties in deliberate fires, by location 26
Chart 24: Number of fatalities in fires, by motive 26
Chart 25: Number of non-fatal casualties in fires, by motive 27
Table 10: Number and percentage of non-fatal casualties by nature of injury sustained in deliberate fires 27
Prevention **28**
Chart 26: Safety systems present at primary fires in buildings, by system type, 2015-16 to 2019-20 28
Table 11: Number of safety systems in building fires, by operation and failure reason 28
Table 12: Number of primary fires in buildings, by presence of smoke alarms and motive 29
Table 13: Number of smoke alarms present at primary fires in buildings, by operation 29
Great Britain comparisons **30**
Table 14: Number of deliberate fires in England, Scotland and Wales 30
Chart 27: Rate of deliberate fires in England, Scotland and Wales per 10,000 population 30
Glossary **31**
Key quality information **33**

All deliberate fires

Fires are classed as primary, secondary or chimney fires.

Primary fires include all fires in non-derelict buildings and vehicles or in outdoor structures, or any fire involving casualties or rescues, or fires attended by five or more appliances.

Secondary fires are mainly outdoor fires including grassland and refuse fires unless they involve casualties or rescues, or are attended by five or more appliances. They include fires in single derelict buildings, derelict road vehicles and derelict outdoor structures.

Chimney fires are reportable fires in occupied buildings where the fire was confined within the chimney structure and did not involve casualties or rescues or are attended by 5 or more appliances.

Accidental fires include those where the fire was ignited by accident or the cause was not known or unspecified.

Deliberate fires include those where deliberate ignition is merely suspected.

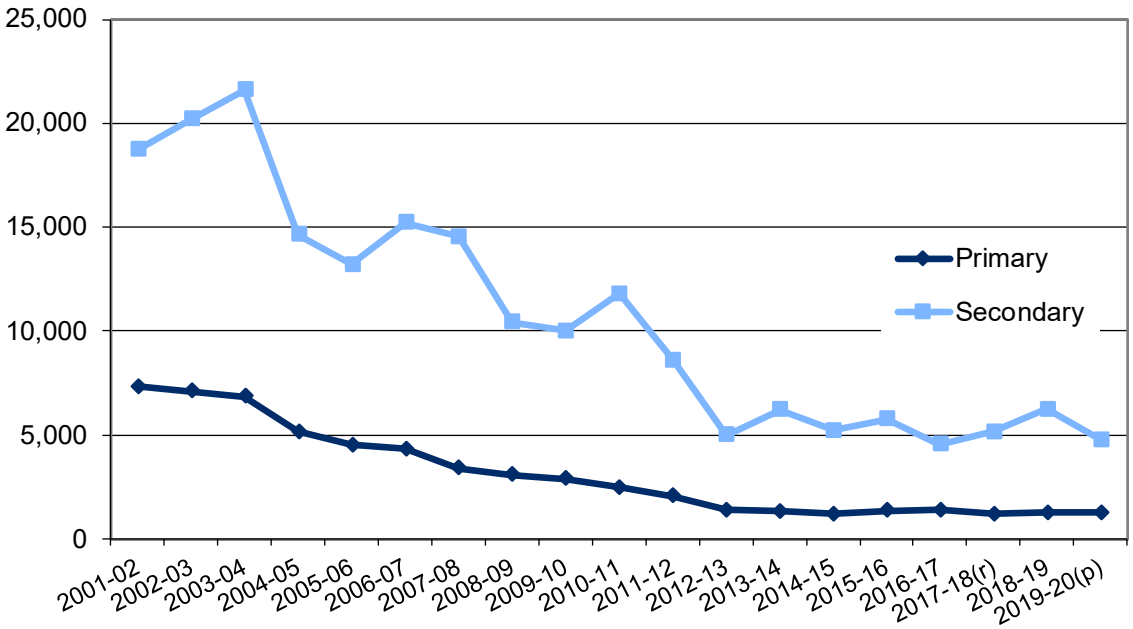
More detailed definitions are in the Glossary.

This section looks at the total number of deliberate fires attended by the Fire and Rescue Authority as recorded via the Incident Recording System (IRS).

Welsh Fire and Rescue Services attended 10,585 fires in 2019-20 of these 6,054 (57%) were started deliberately. This is a decrease of 20% from the 7,523 deliberate fires attended in 2018-19. This decrease follows two consecutive annual increases (of 7% and 18%). Since 2001-02 the number of deliberate fires in Wales has fallen by 77%. The peak in the time series occurred in 2003-04 when there were 28,464 deliberate fires.

In 2019-20 29% of primary fires and 80% of secondary fires were started deliberately.

Chart 2: Number of deliberate fires attended, by type



(r) Revised data.
(p) Provisional data.

In 2019-20, there were 1,261 deliberate primary fires, no percentage change compared with 2018-19. Generally there has been a downward trend in the number of deliberate primary fires since 2001-02, decreasing 83% (chart 2).

Numbers of secondary fires are more prone to fluctuation, as can be seen from chart 2. The majority of these fires occur outdoors and as such may be affected by weather conditions among other factors. There were 4,792 deliberate secondary fires in 2019-20, a decrease of 23% compared with 2018-19, and accounting for 45% of all (accidental and deliberate, primary, secondary and chimney) fires attended by the Fire and Rescue Authorities. Since 2001-02 there has been an overall reduction of 74% in deliberate secondary fires.

In 2019-20, 17% of all attendances (fires, fire false alarms and Special Service Incidents (SSIs)) were for deliberate fires, 4 percentage points lower than in 2018-19 but a similar proportion to that seen in earlier years.

Table 1: Number of deliberate fires, by location

	2014-15	2015-16	2016-17	2017-18(r)	2018-19	2019-20(p)
Primary fires	**1,214**	**1,370**	**1,394**	**1,199**	**1,259**	**1,261**
Dwellings	173	166	139	132	125	130
Other buildings	263	262	266	256	218	268
Road vehicles	633	756	837	677	635	670
Other	145	186	152	134	281	193
Secondary fires	**5,220**	**5,757**	**4,540**	**5,174**	**6,262**	**4,792**
Derelict buildings	60	56	95	100	71	97
Derelict road vehicles	28	26	66	43	36	22
Other	5,132	5,675	4,379	5,031	6,155	4,673
All deliberate fires (a)	**6,434**	**7,127**	**5,935**	**6,374**	**7,523**	**6,054**

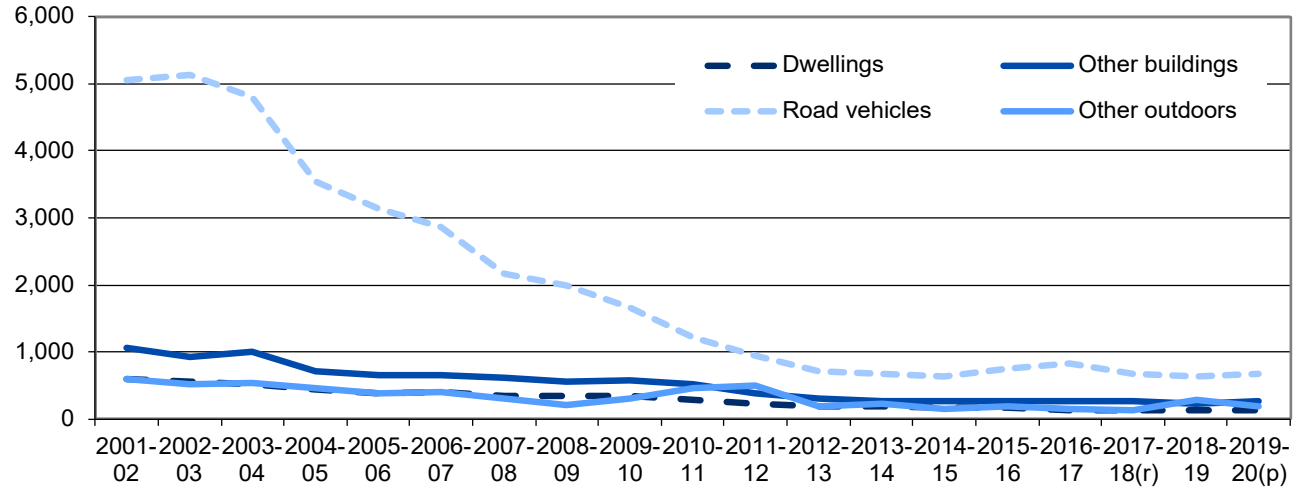
(a) Includes a small number of deliberate chimney fires.
(r) Revised data.
(p) Provisional data.

In 2019-20, 29% of primary fires were deliberate, with similar proportions seen in the previous 7 years. Whilst only 8% of primary dwelling fires were deliberate, more than half of outdoor primary fires, 47% of road vehicle fires and 31% of fires in ‘other buildings’ were deliberate in 2019-20.

As in other years, in 2019-20, road vehicles accounted for the largest proportion of deliberate primary fires in Wales (53%). In 2019-20 the number of road vehicle fires increased by 6% (compared with the previous year) to 670. This increase follows two consecutive annual decreases but the number has seen some fluctuation in recent years. The number of deliberate primary road vehicle fires in 2019-20 is around 13% of the figure in 2001-02, when there were over 5,000 such fires.

In 2019-20 the number of deliberate primary fires in dwellings rose by 4% compared with the previous year, although since numbers are small this equates to 5 more fires. The number of deliberate primary fires in other buildings rose by 23% (50 more fires). However deliberate fires in other locations (which include those occurring outdoors, in outdoor structures and in other transport vehicles) fell by 31%.

Chart 3: Number of deliberate primary fires, by location



(r) Revised data.
(p) Provisional data.

Table 2: Percentage of primary fires started deliberately, by location

	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Building	15	16	15	15	14	16
Dwelling	10	9	7	8	8	8
Other residential	11	16	17	12	12	12
Non residential	27	29	31	30	26	33
Road vehicle	44	48	50	45	43	47
Other(a)	51	51	51	49	60	56
Outdoor	51	51	52	51	61	58
All primary fires	27	29	29	28	29	29

(a) Includes 'other transport vehicles'.

Over the years there have been a number of national programmes for dealing with deliberate fires. The Wales Arson Reduction Strategy (WARS) first reported in 2007, with a review in 2009, and updated strategies for 2012-15 and most recently 2019[1]. A delivery plan from WARS III resulted in a multi-agency taskforce 'Operation Dawns Glaw' being established in 2015 and aims to reduce the number of deliberate grassland fires. Analysis of grassland fire data can be found in Grassland Fires 2019-20 which was published in February 2021.

Ongoing targeted programmes continue, for instance the South Wales FRA Bernie campaign which specifically targets primary school children, to engage with and educate them on the potential consequences of deliberately setting grass and mountain fires. The Fire Service in North Wales, in conjunction with North Wales Police and the British Transport Police, launched a deliberate fires awareness campaign in March 2016. The theme of the campaign is to encourage fire and potential fire starters to think about the consequences of deliberately starting grass and mountain fires.

More intensive programmes such as 'Crimes and Consequences' and 'Phoenix' operate throughout the year and across Wales.

Over 87,000 children and young people received Fire Safety talks[2] at school in 2019-20.

[1] Wales Arson Reduction Strategy
[2] StatsWales table - Children and Young People Interventions by Participant and Interventions

Work has also been done to inhibit the spread of fires; Natural Resources Wales has examined how changes in land and forestry management methods can be used to make grasslands less conducive to fires or be better structured to control the spread of fires and firefighters have also been involved in developing firebreaks on some of our valleys' hillsides, using the latest techniques learned internationally.

In 2019-20, 35% of primary fires in South Wales, 26% in North Wales and 25% in Mid and West Wales were started deliberately. For secondary fires the proportion started deliberately was higher, 91% in South Wales, 75% in Mid and West Wales and 48% in North Wales.

South Wales FRA continues to attend the bulk of deliberate fires in Wales (almost two-thirds of all deliberate) fires; Mid and West Wales attend just over a quarter of the deliberate fires in Wales, whilst North Wales a little under a tenth. Similar proportions are seen throughout the time series.

In 2019-20 all FRAs in Wales saw decreases in deliberate fires compared with 2018-19; the largest decrease being in South Wales (25%), whilst Mid and West Wales saw a 10% fall. North Wales saw 2 fewer deliberate fires although this resulted in no percentage change.

Only South Wales saw a decrease in deliberate primary fires (down 6%), whereas Mid and West Wales and North Wales saw increases of 13% and 3% respectively. All FRSs saw decreases in numbers of deliberate secondary fires, down 29% in South Wales, down 14% in Mid and West Wales and down 2% in North Wales.

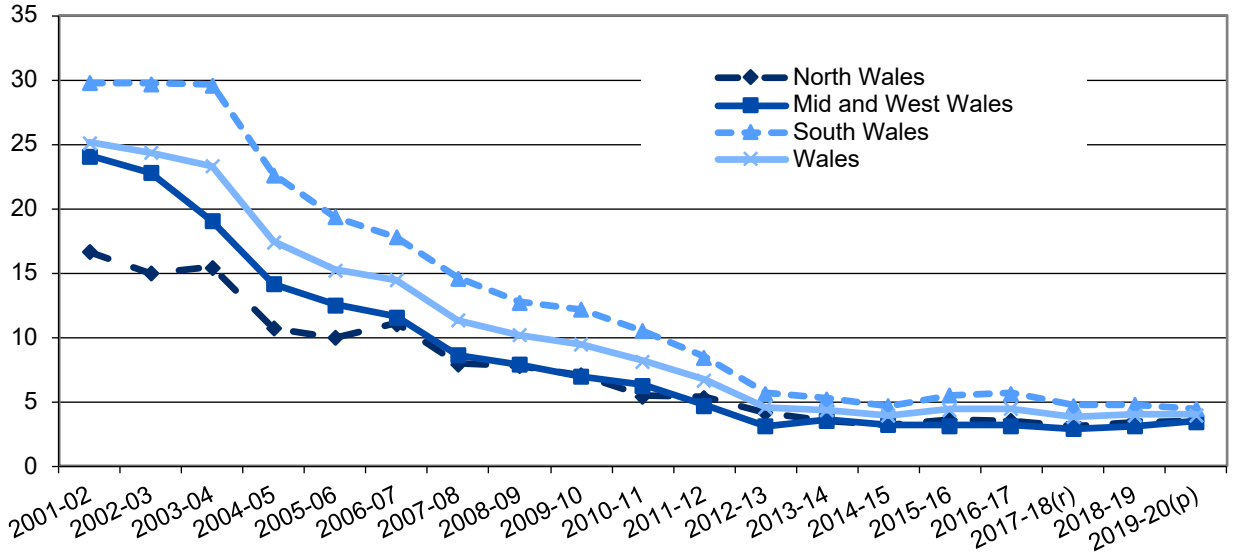
Table 3: Number and percentage of deliberate fires, by fire and rescue authority

	Primary fires				Secondary fires				All fires			
	North Wales	Mid and West Wales	South Wales	Wales	North Wales	Mid and West Wales	South Wales	Wales	North Wales	Mid and West Wales	South Wales	Wales
Number												
2015-16	253	285	832	1,370	450	1,327	3,980	5,757	703	1,612	4,812	7,127
2016-17	246	288	860	1,394	348	998	3,194	4,540	594	1,287	4,054	5,935
2017-18(r)	215	262	722	1,199	435	1,257	3,482	5,174	650	1,520	4,204	6,374
2018-19	241	283	735	1,259	414	1,483	4,365	6,262	655	1,768	5,100	7,523
2019-20(p)	248	319	694	1,261	405	1,273	3,114	4,792	653	1,593	3,808	6,054
Percentage by region												
2015-16	18	21	61	100	8	23	69	100	10	23	68	100
2016-17	18	21	62	100	8	22	70	100	10	22	68	100
2017-18	18	22	60	100	8	24	67	100	10	24	66	100
2018-19	19	22	58	100	7	24	70	100	9	24	68	100
2019-20	20	25	55	100	8	27	65	100	11	26	63	100
Percentage in region which are deliberate												
2015-16	24	20	37	29	49	74	93	82	33	48	73	59
2016-17	23	20	38	29	45	75	92	81	29	44	70	55
2017-18	22	19	37	28	49	77	92	82	32	48	73	58
2018-19	25	20	37	29	35	68	90	77	29	47	74	58
2019-20	26	25	35	29	48	75	91	80	33	51	69	57

(r) Revised data.
(p) Provisional data.

Charts 4 and 5 show rates of primary and secondary deliberate fires per 10,000 population. As with absolute numbers of fires, the highest rates are consistently in South Wales, although the gap has narrowed greatly since 2001-02. The difference between the highest and the lowest regional rates of primary fires has fallen from around 13 per 10,000 population in 2001-02, to approximately 1 per 10,000 population in 2019-20.

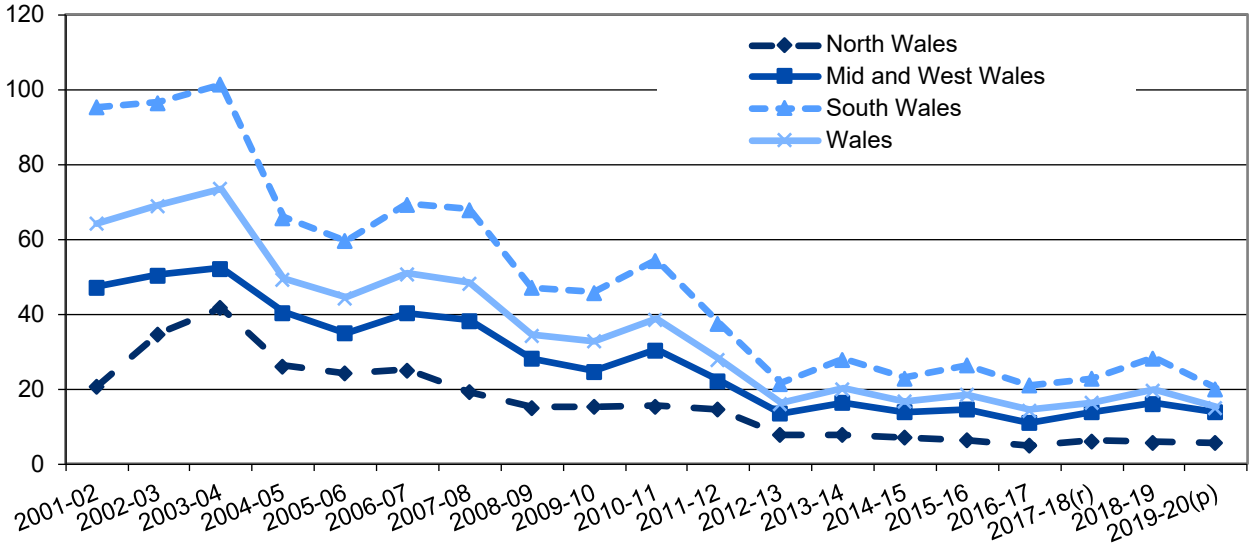
Chart 4: Rate of deliberate primary fires per 10,000 population (a)



(a) Population data are taken from ONS Mid Year Estimates and are revised periodically and so rates are subject to change between publications.
(r) Revised data.
(p) Provisional data.

Similarly in 2001-02 the difference between the highest rate of secondary fires and the lowest rate was around 75 fires per 10,000 population, in 2019-20 this figure has fallen to approximately 14 fires per 10,000 per population.

Chart 5: Rate of deliberate secondary fires per 10,000 population (a)

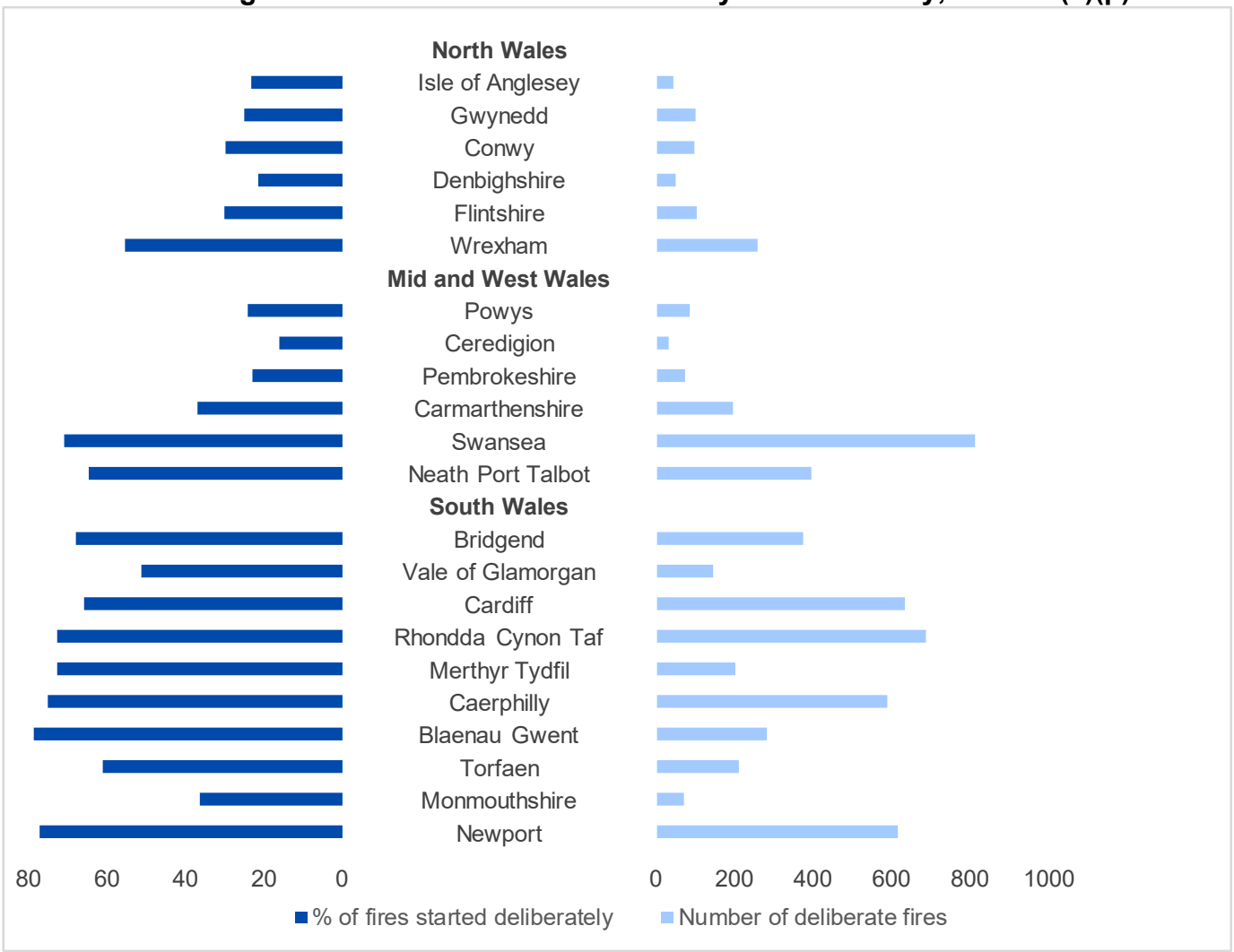


(a) Population data are taken from ONS Mid Year Estimates and are revised periodically and so rates are subject to change between publications.
(b) Revised data.
(p) Provisional data.

Chart 6 below shows the number of deliberate fires occurring in each local authority (LA) in 2019-20. It also shows the proportion of fires within each LA which were started deliberately.

From the chart we can see 4 LAs (Swansea, Rhondda Cynon Taf, Cardiff and Newport) each had over 600 deliberate fires, accounting for, in total, 45% of all deliberate fires in Wales in 2019-20. Blaenau Gwent had the highest proportion (79%) of fires which were deliberately started. In 5 LAs in South Wales and 1 in Mid and West Wales over 70% of fires were started deliberately. In North Wales, Wrexham had both the highest number and the highest proportion of deliberate fires (259 deliberate fires and 56% of fires started deliberately). Overall Ceredigion has both the fewest deliberate fires (only 31 deliberate fires) and the lowest proportion of fires started deliberately (16%).

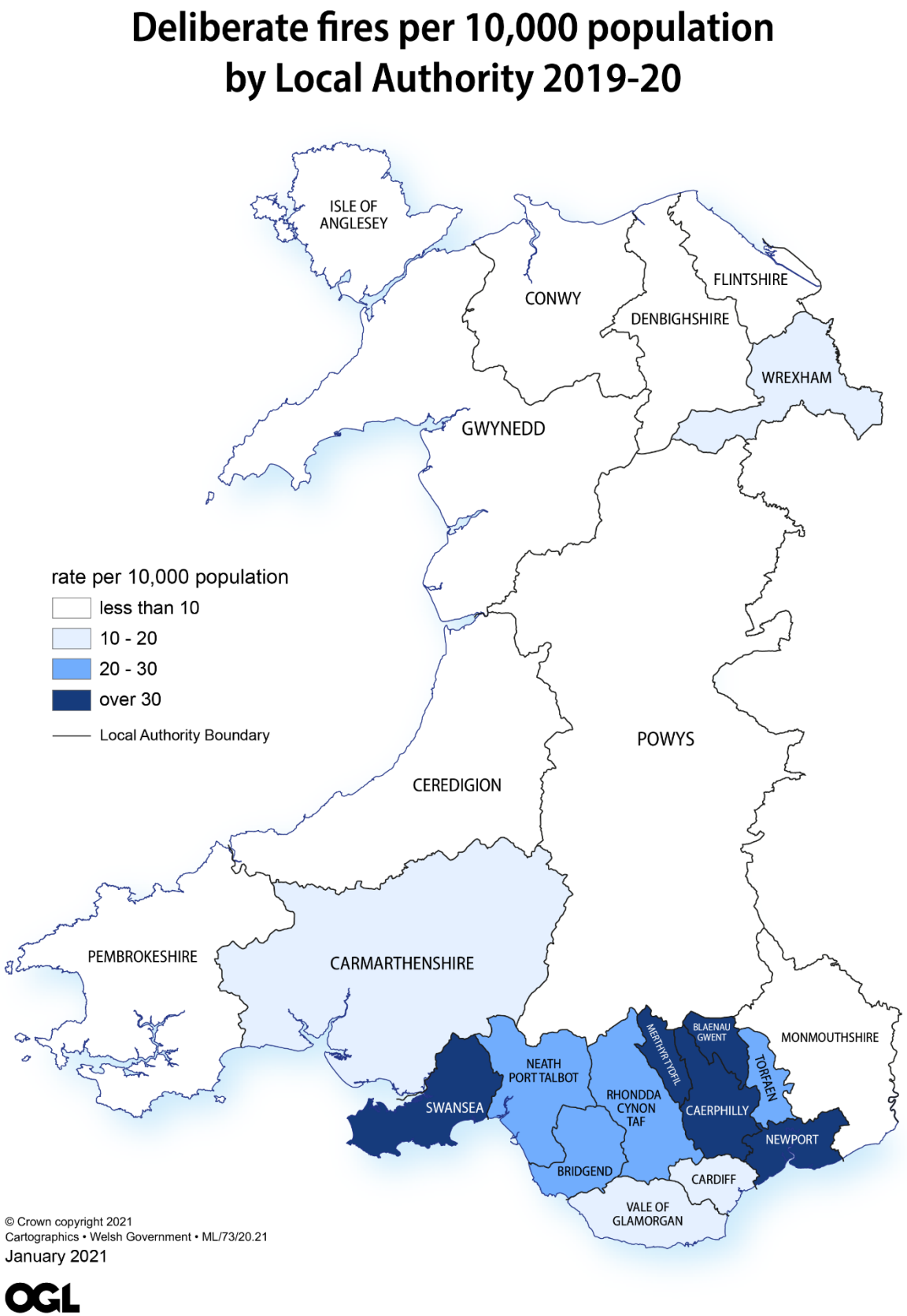
Chart 6: Percentage and number of deliberate fires by local authority, 2019-20(a)(p)



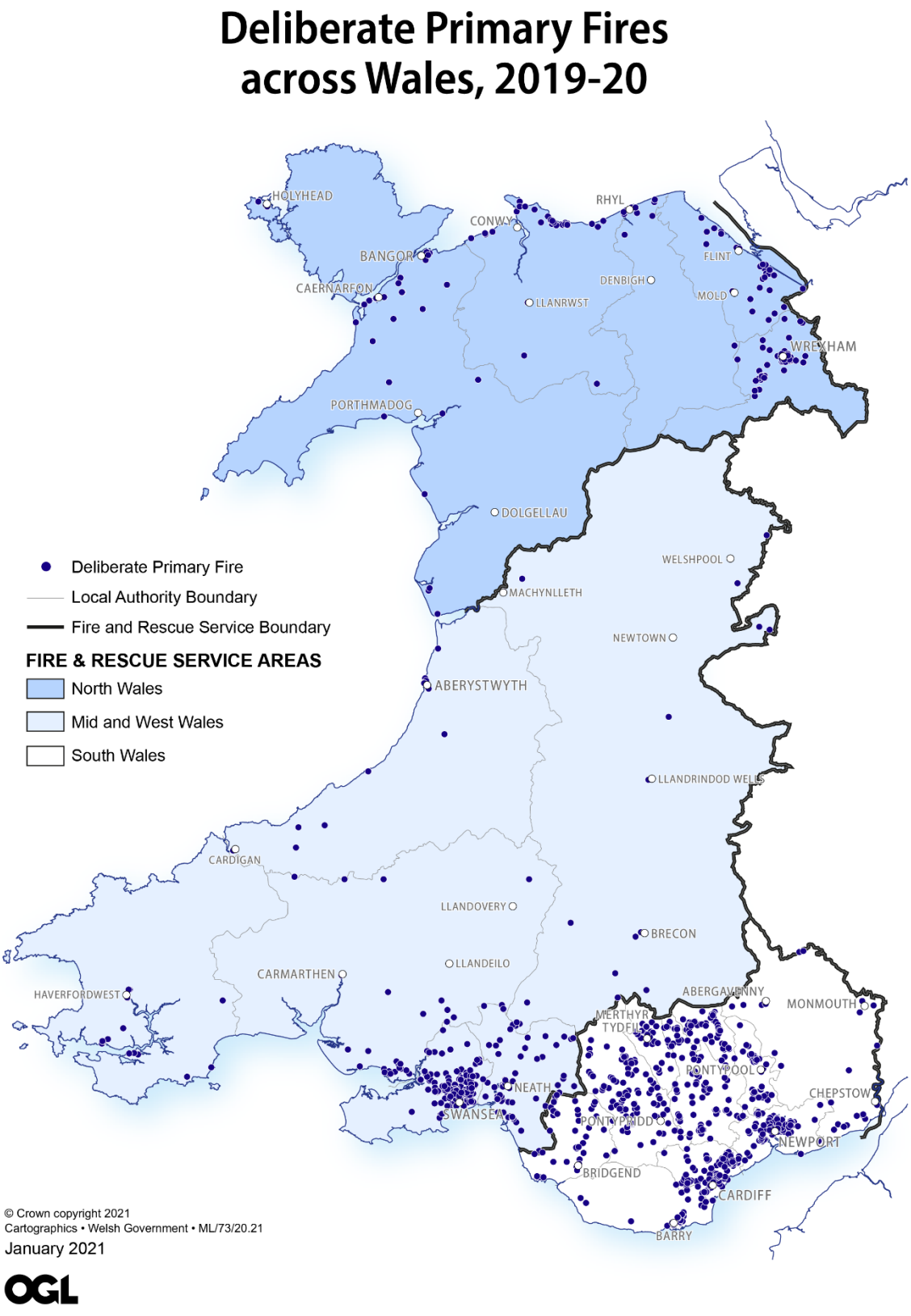
(a) Local authorities have been assigned to incidents based on the grid reference recorded by the Fire and Rescue Authority. See the Key Quality Information for further information.
(p) Provisional data

Wrexham had the highest proportion of all the LAs of deliberate fires occurring in buildings, 39% of deliberate fires in the LA. Blaenau Gwent had the lowest proportion, with only 1% of deliberate fires occurring in buildings.

The map below shows the rates (per 10,000 population) of deliberate fires in each Local Authority in Wales in 2019-20.

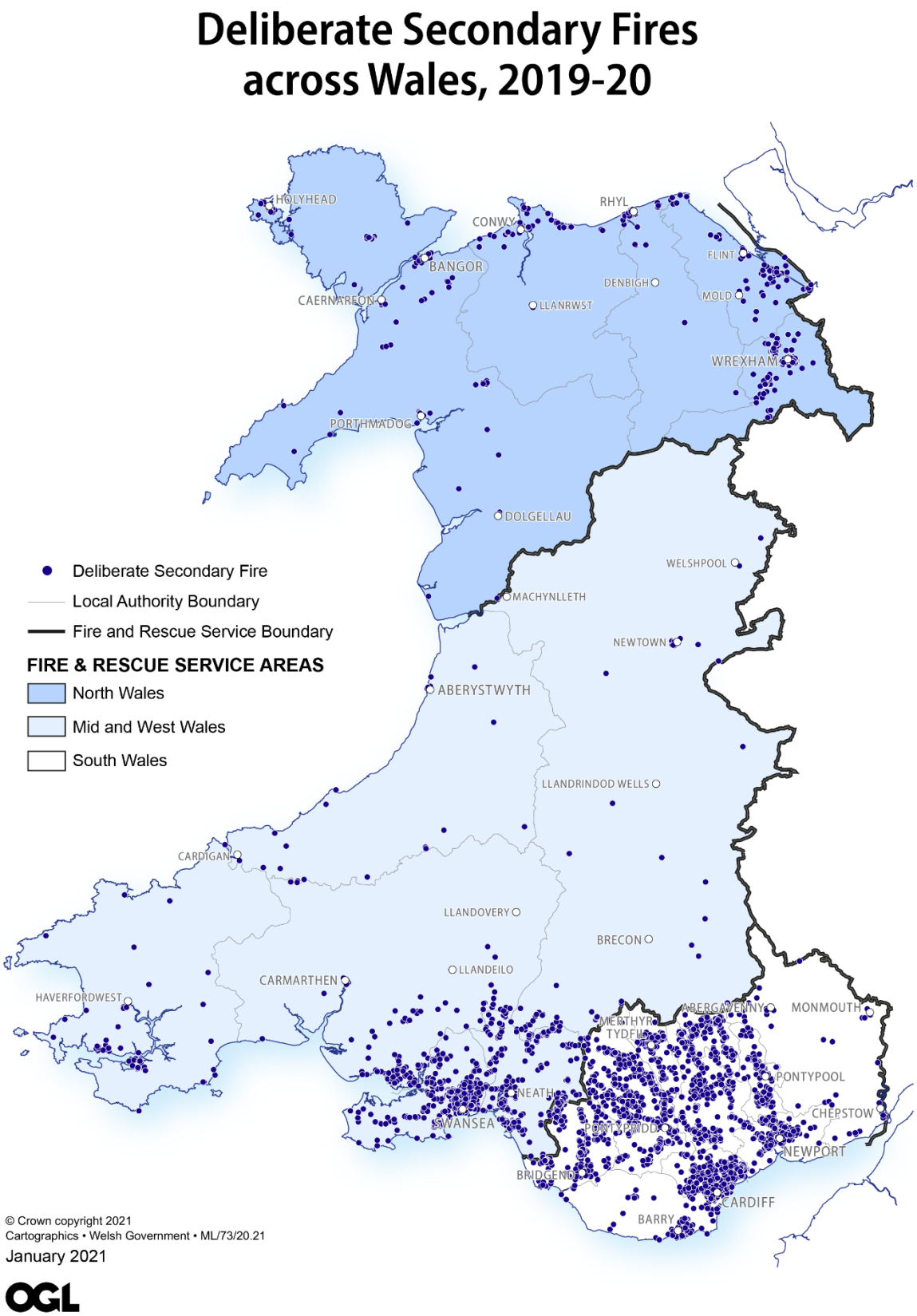


The map below shows the locations of deliberate primary fires in Wales. The map highlights the level of concentration of these fires in the South Wales area.



Data mapped above are based on grid references; see the Key quality information for further details

The map below shows the locations of deliberate secondary fires in Wales. As with primary fires, the map shows the large number of clusters of these fires in the South Wales area.



Data mapped above are based on grid references; see the Key quality information for further details

Fires by month and time of day

Since 2010-11 in all but one year, April has been the month with the most deliberate fires each year; the exception was 2018-19 when 25% occurred in July. In 2019-20, April had 17% of the deliberate fires occurring in the year and numbers more than doubled compared with 2018-19. Numbers of deliberate fires in April have varied greatly throughout the time series with a high of 3,119 in 2010-11 and a low of 478 in 2018-19. May saw the second highest number in 2019-20 with 876 deliberate fires and 14% of the deliberate fires in 2019-20. The months April, May, September, December and March all saw an increase in the number of deliberate fires in 2019-20.

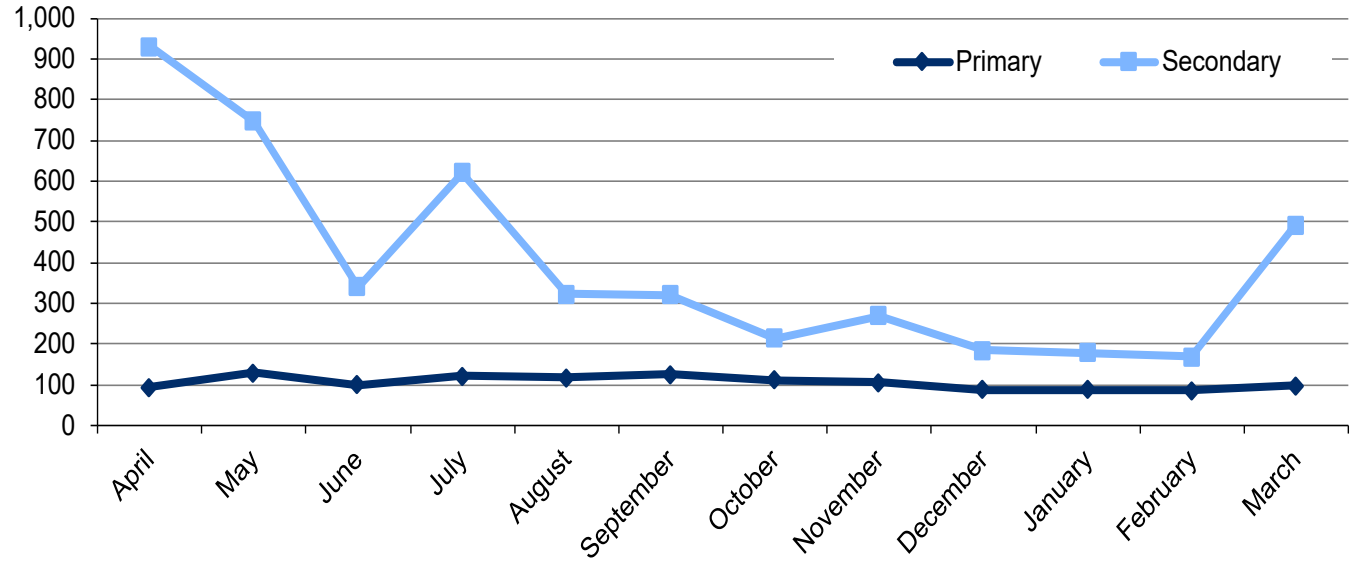
Table 4: Total deliberate fires, by month (a)

	Number					Percentage				
	2015-16	2016-17	2017-18(r)	2018-19	2019-20(p)	2015-16	2016-17	2017-18	2018-19	2019-20
April	1,894	729	1,305	478	1,025	27	12	20	6	17
May	638	660	879	770	876	9	11	14	10	14
June	656	542	549	850	439	9	9	9	11	7
July	470	499	595	1,900	744	7	8	9	25	12
August	455	582	487	578	441	6	10	8	8	7
September	461	414	350	440	447	6	7	5	6	7
October	561	563	476	514	326	8	9	7	7	5
November	362	508	559	421	375	5	9	9	6	6
December	208	354	278	216	273	3	6	4	3	5
January	232	299	257	385	266	3	5	4	5	4
February	370	280	387	433	253	5	5	6	6	4
March	820	505	252	538	589	12	9	4	7	10
Total	7,127	5,935	6,374	7,523	6,054	100	100	100	100	100

(a) Includes deliberate chimney fires.
(r) Revised data.
(p) Provisional data.

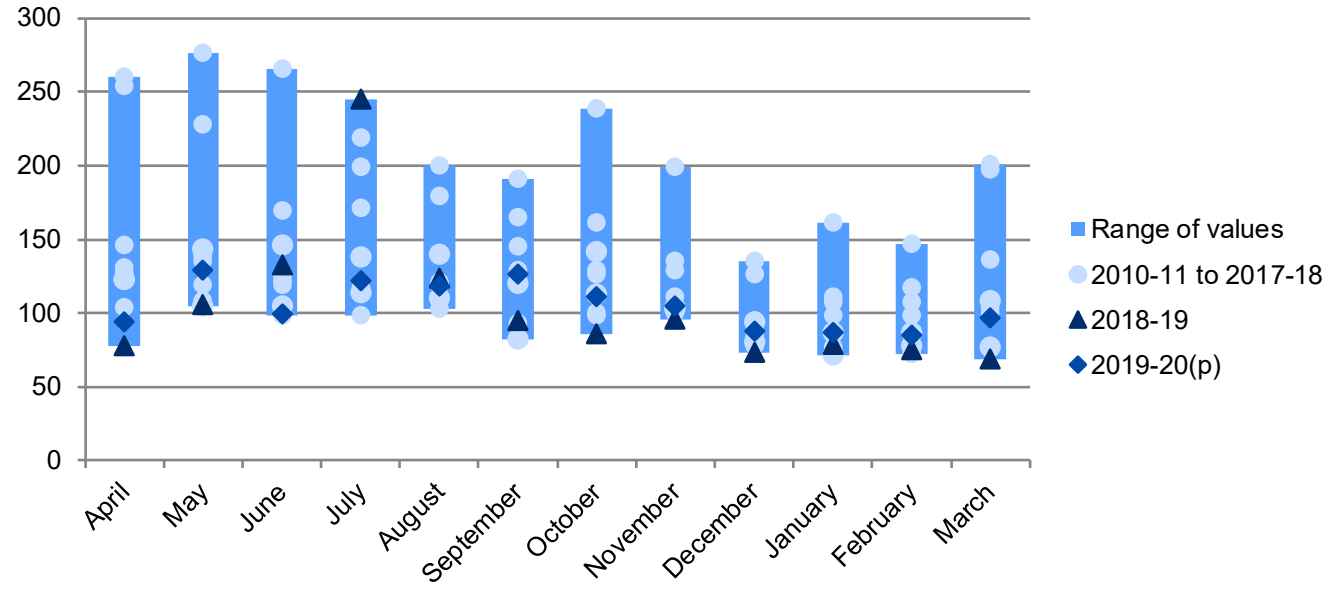
Chart 7 shows how the number of deliberate primary fires stays relatively static throughout the year, whereas the number of secondary fires varies, with the peak being in the spring months. Similar patterns are seen in earlier years.

Chart 7: Number of primary and secondary deliberate fires, by month, 2019-20 (p)



(p) Provisional data.

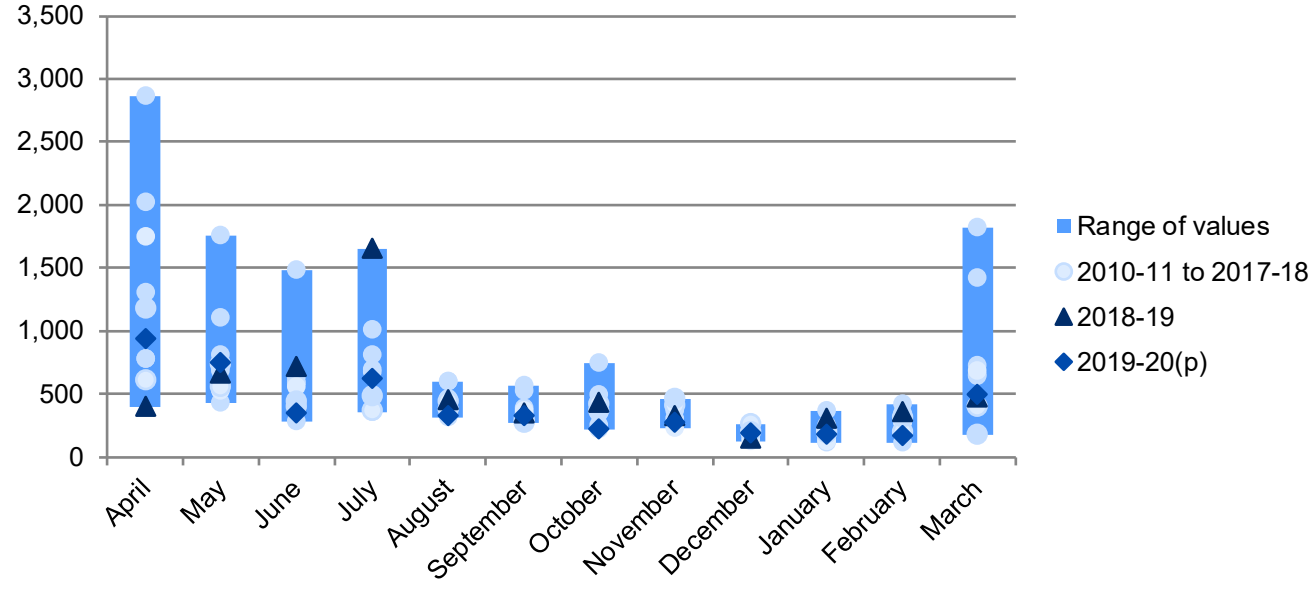
Chart 8: Number of deliberate primary fires, by month



(p) Provisional data.

Chart 8 shows 2019-20 and 2018-19 deliberate primary fires by month along with the range of values for each month for the years 2010-11 to 2019-20 inclusive. The chart indicates that in the most recent years numbers of deliberate primary fires have been comparatively low, and that throughout the year there's not a great deal of fluctuation, monthly numbers across the last 10 years vary from 69 up to 276.

Chart 9: Number of deliberate secondary fires, by month



(p) Provisional data.

Chart 9 shows the respective picture for deliberate secondary fires, and illustrates when the peaks are likely to occur within the year, but within these months the number of fires seen each year cover a far wider range. As with primary fires, numbers of deliberate secondary fires for 2019-20 and 2018-19 are at the lower end of the range, with the exception of July 2019 when there were unusually high numbers.

From table 5 we can see that deliberate secondary fires fluctuate a great deal throughout the year and in 2019-20 occurred mainly in April and May whilst numbers of deliberate primary fires stay relatively stable. For instance in 2019-20, percentages of deliberate primary fires for each month ranged from 7% to 10%, whereas for deliberate secondary fires, percentages for individual months ranged from 4% to 19%. Since the majority of secondary fires occur outdoors, they can be greatly influenced by the seasons and weather conditions.

In 2019-20 at least 65% of fires seen in any month were outdoors, the lowest proportion being in October, whereas 92% of deliberate fires in April occurred outdoors. However, October saw the highest proportion of deliberate road vehicle fires (22% of deliberate fires in that month).

Most months saw an increase in the number of deliberate primary fires in 2019-20, the only falls occurred in June (down 26%), July (down 50%) and August (down 5%). 4 months in 2019-20 saw an increase in deliberate secondary fires, the largest being in April (more than double the number in 2018-19). The largest decrease in secondary deliberate fires occurred in July (62%).

Table 5: Number and percentage of deliberate primary and secondary fires, by month

	Number					Percentage				
	2015-16	2016-17	2017-18(r)	2018-19	2019-20(p)	2015-16	2016-17	2017-18	2018-19	2019-20
Primary										
April	146	123	123	78	94	11	9	10	6	7
May	119	105	143	106	129	9	8	12	8	10
June	98	146	105	133	99	7	10	9	11	8
July	117	138	114	245	122	9	10	10	19	10
August	110	140	110	124	118	8	10	9	10	9
September	93	120	82	95	126	7	9	7	8	10
October	129	142	113	86	111	9	10	9	7	9
November	129	104	103	96	105	9	7	9	8	8
December	88	94	80	73	88	6	7	7	6	7
January	107	87	71	79	87	8	6	6	6	7
February	98	87	78	75	85	7	6	7	6	7
March	136	108	77	69	97	10	8	6	5	8
All	**1,370**	**1,394**	**1,199**	**1,259**	**1,261**	**100**	**100**	**100**	**100**	**100**
Secondary										
April	1,748	606	1,182	400	931	30	13	23	6	19
May	519	555	736	664	747	9	12	14	11	16
June	558	396	444	717	340	10	9	9	11	7
July	353	361	481	1,655	622	6	8	9	26	13
August	345	442	377	453	323	6	10	7	7	7
September	368	294	268	345	321	6	6	5	6	7
October	432	421	363	428	215	8	9	7	7	4
November	233	404	456	325	270	4	9	9	5	6
December	120	260	198	143	184	2	6	4	2	4
January	125	211	186	306	179	2	5	4	5	4
February	272	193	308	357	168	5	4	6	6	4
March	684	397	175	469	492	12	9	3	7	10
All	**5,757**	**4,540**	**5,174**	**6,262**	**4,792**	**100**	**100**	**100**	**100**	**100**

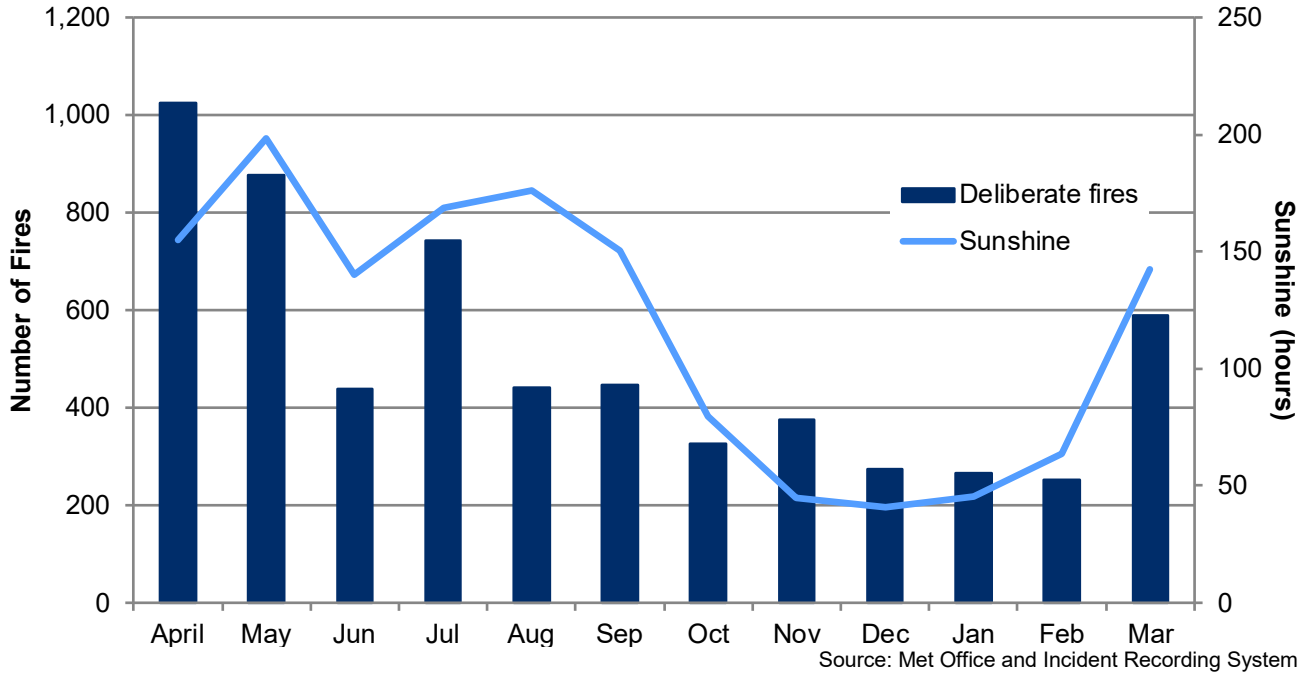
(r) Revised data.
(p) Provisional data.

As seen in charts 10 and 11 data from the Met Office shows that, in 2019-20, May saw the least amount of rainfall, the most hours of sunshine, and the second highest number of fires. Levels of sunshine were low in February, which was also the wettest month and saw the fewest deliberate fires. However weather

data cannot explain all fluctuations, for instance numbers of fires fell in May 2019 compared with April 2019 but the total hours of sunshine went up and levels of rainfall fell.

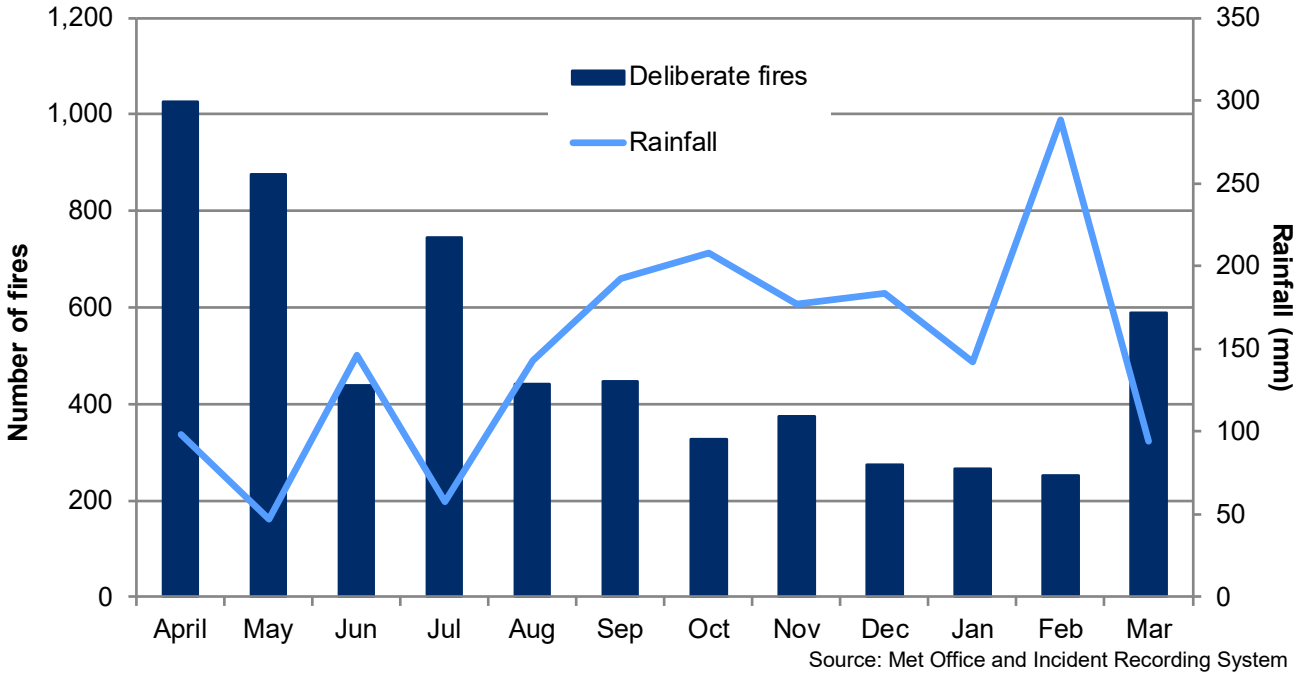
Weather data are available from the Met Office

Chart 10: Total deliberate fires and total hours of sunshine, by month, 2019-20 (p)



(p) Provisional data.

Chart 11: Total deliberate fires and total rainfall, by month, 2019-20 (p)



(p) Provisional data.

In 2019-20 (and as in previous years) the largest proportion of deliberate primary and secondary fires occurred between 6pm and midnight, with 39% of primary fires and 53% of secondary fires. Around 3 in

10 primary fires took place between midnight and 5.59 a.m., whilst a similar proportion of secondary fires took place between midday and 5.59 p.m. The proportions each year since 2009-10 remained relatively unchanged.

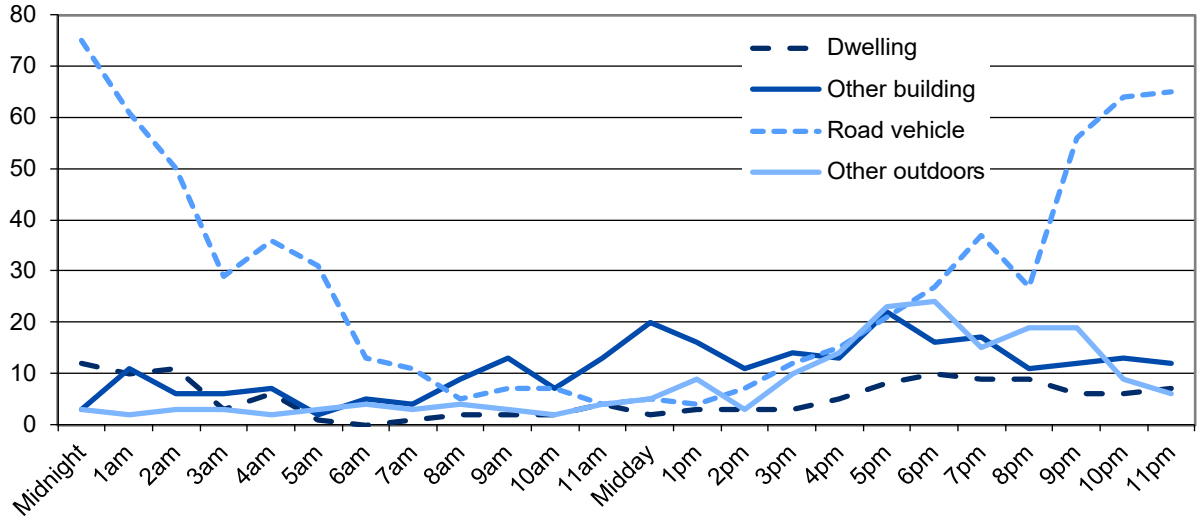
Table 6: Number and percentage of deliberate primary and secondary fires, by time of day

	Number				Percentage			
	2016-17	2017-18(r)	2018-19	2019-20(p)	2016-17	2017-18	2018-19	2019-20
Primary								
Midnight - 5.59 a.m.	424	332	354	376	30	28	28	30
6.00 a.m. - 11.59 a.m.	109	113	129	129	8	9	10	10
Midday - 5.59 p.m.	229	234	268	248	16	20	21	20
6.00 p.m. - 11.59 p.m.	609	503	498	496	44	42	40	39
Late call (a)	23	17	10	12	2	1	1	1
Secondary								
Midnight - 5.59 a.m.	475	507	596	465	10	10	10	10
6.00 a.m. - 11.59 a.m.	318	301	504	359	7	6	8	7
Midday - 5.59 p.m.	1,267	1,461	2,061	1,401	28	28	33	29
6.00 p.m. - 11.59 p.m.	2,470	2,892	3,096	2,561	54	56	49	53
Late call (a)	10	13	5	6	0	0	0	0

(a) A fire known to be extinguished when the call was made (or to which no call was made, e.g. a fire which comes to the attention of the fire and rescue service as a result of a press report or inquest) and the fire and rescue service attended.
(r) Revised data.
(p) Provisional data.

Chart 12 shows that deliberate fires in dwellings, other buildings and other outdoor deliberate fires follow a similar pattern in terms of the time of day, with most occurring between midday and midnight. However for road vehicles, distinct peaks can be seen in the timing of these fires, with 75% occurring between 7 p.m. and 4.59 a.m. during 2019-20.

Chart 12: Number of deliberate primary fires, by time of day and location 2019-20 (p)

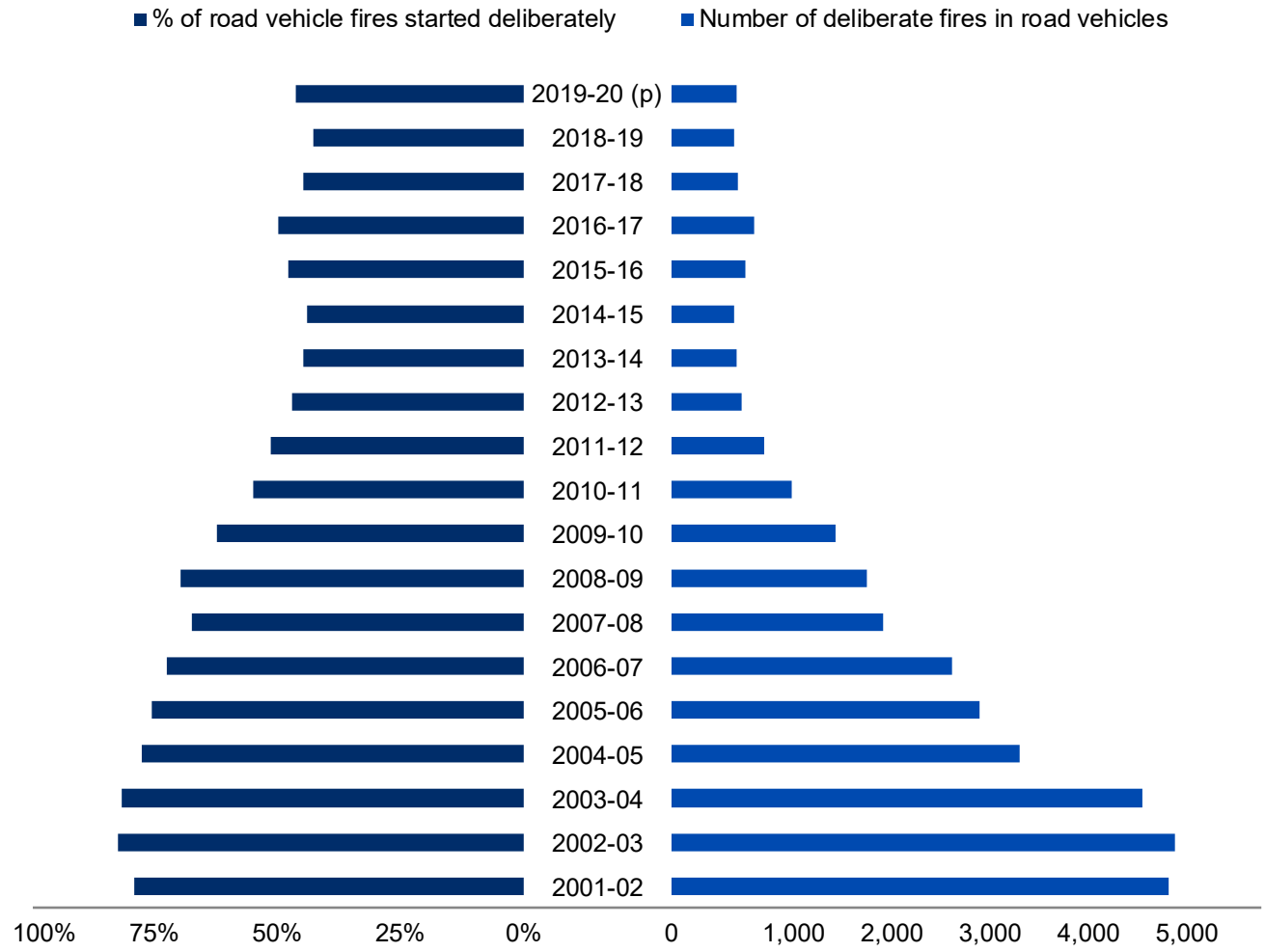


(p) Provisional data.

Road vehicle fires

In 2019-20, fires in road vehicles made up 53% of deliberate primary fires in Wales and in this year numbers rose by 6% compared with the previous year. However overall numbers of deliberate primary fires in road vehicles have fallen by 87% since 2001-02, the start of the time series. The chart below also shows the proportion of primary road vehicle fires which were started deliberately; since 2012-13 half or fewer of all road vehicle fires were started deliberately; in 2019-20 47% of primary fires in road vehicles were deliberate.

Chart 13: Percentage and number of deliberate primary fires in road vehicles



(p) Provisional data.

In 2019-20, there were 670 fires started deliberately in vehicles, and a further 22 in derelict vehicles; in total this is 21 more than in the previous year. Most vehicles set on fire were cars, almost two thirds of all deliberate primary road vehicle fires. In 2019-20, of the 883 (accidental and deliberate) fires in cars, 48% were started deliberately.

Motorcycle (87%), multiple vehicles (81%) and caravan (72%) fires saw the largest proportions of deliberate fires in 2019-20 although numbers of such fires are not high. 41% of deliberate primary vehicle fires involved stolen or abandoned vehicles, compared with just 4% of accidental primary vehicle fires.

Table 7: Number and percentage of deliberate road vehicle fires, by vehicle type

	Number					Percentage which are deliberate				
	2015-16	2016-17	2017-18	2018-19	2019-20(p)	2015-16	2016-17	2017-18	2018-19	2019-20
Agricultural	2	2	2	1	3	3	3	2	1	4
Bus/coach	3	0	0	0	0	14	0	0	0	0
Car	547	593	452	443	422	51	52	47	46	48
Caravan (a)	36	35	27	28	28	69	76	75	72	72
Lorry/HGV	5	6	4	4	4	10	11	8	7	7
Minibus	1	4	2	4	6	13	57	50	57	60
Motor home	7	4	3	3	6	41	21	20	20	30
Motorcycle	70	101	85	69	81	83	84	89	79	87
Multiple vehicles	9	10	18	8	17	64	63	62	44	81
Van	64	68	66	65	84	44	45	41	38	48
Other (b)	12	14	18	10	19	27	47	43	28	40
All deliberate primary road vehicle fires	**756**	**837**	**677**	**635**	**670**	**48**	**50**	**45**	**43**	**47**
of which										
stolen vehicles	44	53	45	34	32	90	98	88	100	89
abandoned vehicles	291	364	302	252	270	93	92	93	91	95
All deliberate secondary road vehicle fires (c)	26	66	43	36	22	81	84	84	86	76
All deliberate road vehicle fires	**782**	**903**	**720**	**671**	**692**	**49**	**52**	**46**	**44**	**47**

(a) Includes caravans on tow.
(b) Includes bicycles, tankers and trailers.
(c) Derelict vehicles.
(p) Provisional data.

In the period 2009-10 to 2013-14 there had been a sharp fall in the number of abandoned vehicles which were deliberately set alight. Since this time numbers have seen some fluctuation but have generally been more stable. The numbers of stolen vehicles which have been deliberately set on fire are fewer than those abandoned but there has been more of a sustained downward trend.

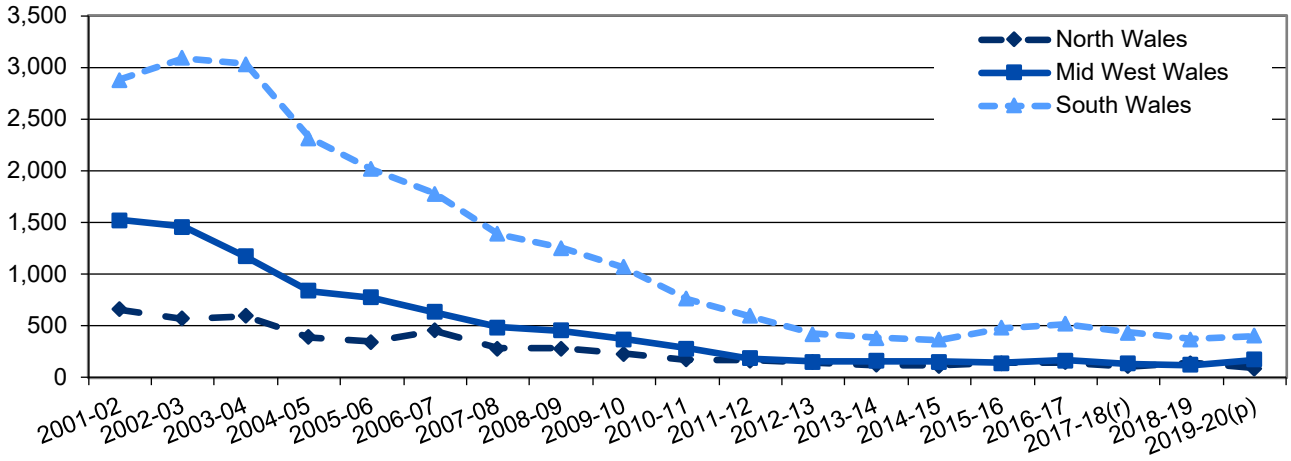
The majority (6 in 10) of deliberate primary fires in road vehicles occurred in South Wales in 2019-20. Throughout the time series the proportion occurring in South Wales has been highest, varying between 57% and 65%. Mid and West Wales saw 26% of road vehicle fires in 2019-20 whilst 14% occurred in North Wales.

Numbers of road vehicle fires in two Welsh FRSs saw increases in 2019-20 compared with the previous year, a rise of 42% in Mid and West Wales and 9% in South Wales. North Wales was the only FRS to see a fall, of 35%. At the beginning of the time series (2001-02) numbers of deliberate fires in road vehicles were far higher and in those years to 2011-12 a steady decrease can be observed. However in more recent years the fall is less noticeable and all FRSs have seen small year on year rises from time to time. Compared with 2001-02 numbers have fallen by a similar proportion in all three FRSs; Mid and West Wales has seen a fall of 88%, South Wales of 86% and North Wales 86%.

The Wales Arson Reduction Strategy highlighted two key factors contributing to arson, the need to promptly remove unwanted and abandoned vehicles and to reduce vehicle crime. The removal of abandoned vehicles on open land or any land forming part of the highway is the responsibility of the respective Local Authority.

The Wales Arson Reduction Strategy noted that vehicle crime continues to fall, reflecting that vehicles are designed and built more securely. According to police recorded crime data (not currently National Statistics) published by the Office for National Statistics[3], offences against vehicles in Wales have fallen by 75% and thefts or unauthorised taking of vehicles have fallen by 77% between 2002-03 and 2019-20. However in 2019-20 vehicle theft saw a slight increase (1%) compared with 2018-19, the fourth annual increase in a row.

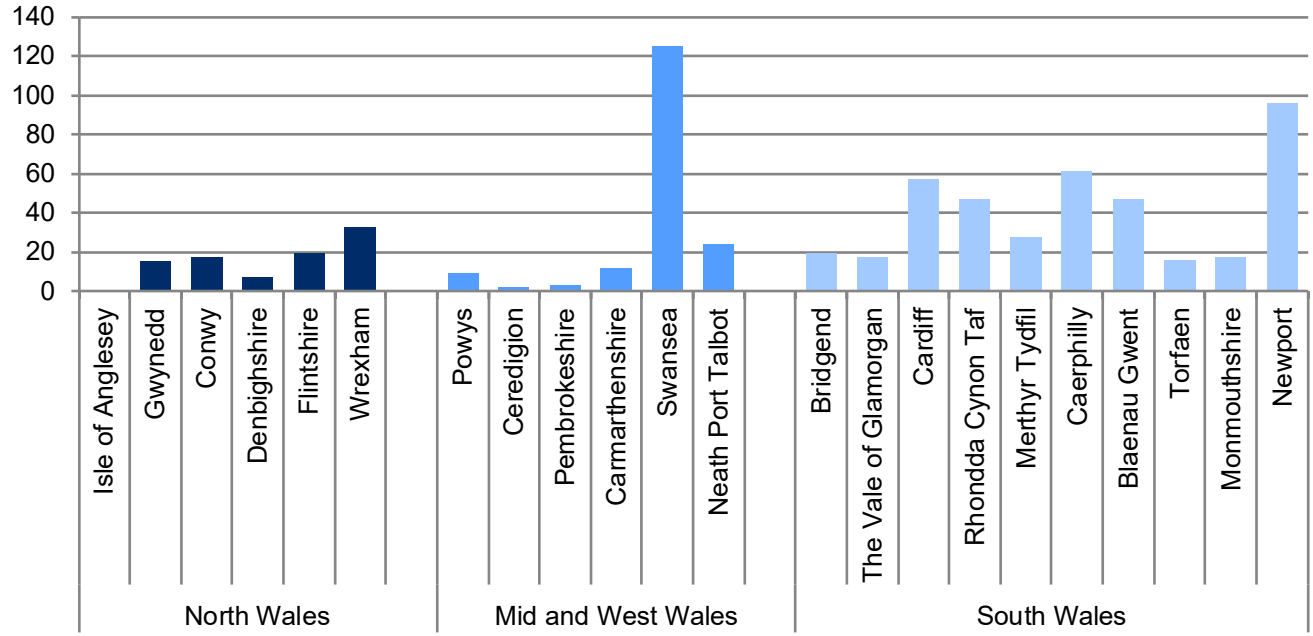
Chart 14: Number of deliberate primary fires in road vehicles, by fire and rescue authority



(r) Revised data.
(p) Provisional data.

Swansea had the highest number of deliberate road vehicle fires (125) equating to 19% of the number in Wales in 2019-20; Newport had the next highest number (96 and equating to 14% of the Wales total). Merthyr Tydfil was the LA with the largest proportion of deliberate primary fires which occurred in road vehicles (82%), followed by Blaenau Gwent (77%).

Chart 15: Number of deliberate primary fires in road vehicles, by local authority 2019-20(p)



(p) Provisional data

[3]ONS Crime Statistics 2019-20

School fires

In 2019-20 there were 4 deliberate primary fires in schools, 4 fewer than in the previous year and equating to 17% of all fires in schools. The peak figure in the time series (as seen below in chart 16) was 79 deliberate fires in schools in 2002-03.

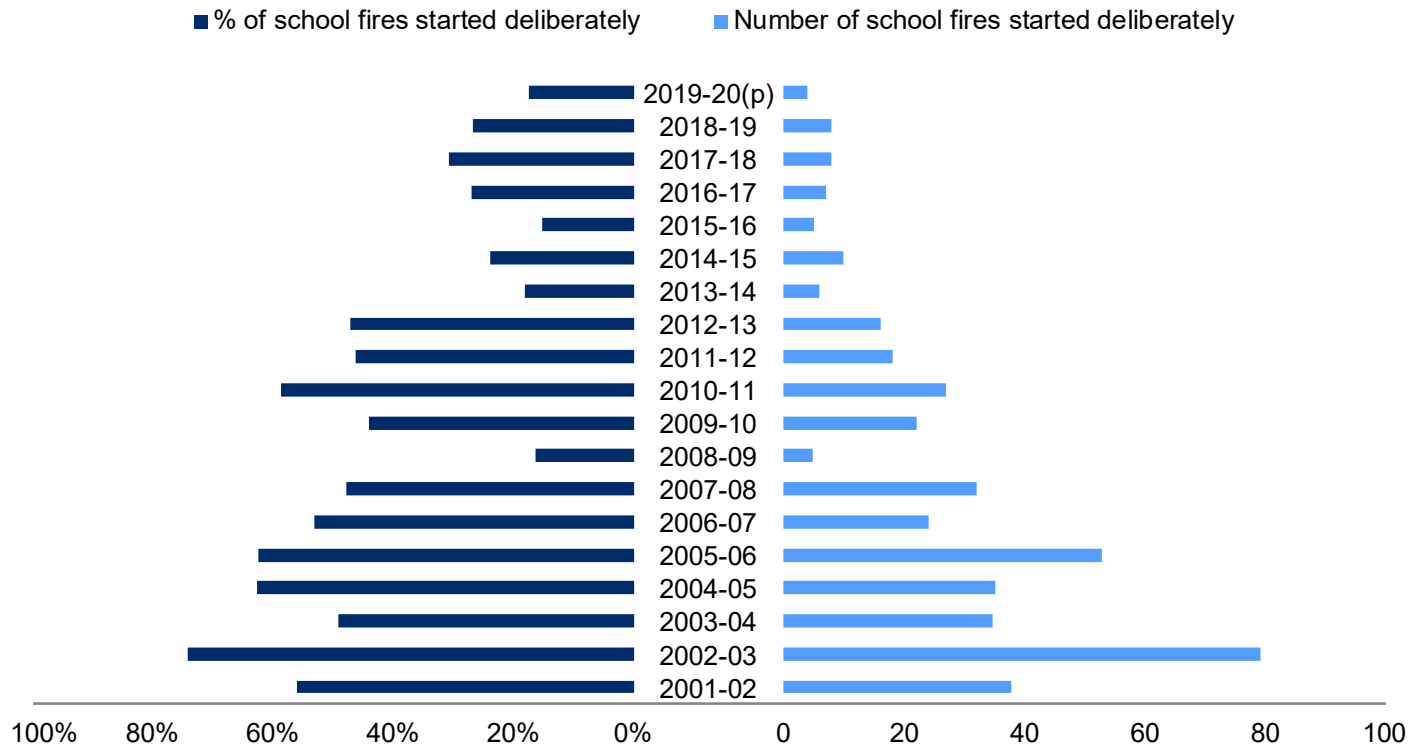
Table 8: Number of school fires, by motive and fire and rescue authority

	North Wales		Mid and West Wales		South Wales		Wales	
	Accidental	Deliberate	Accidental	Deliberate	Accidental	Deliberate	Accidental	Deliberate
2010-11	2	5	6	5	11	17	19	27
2011-12	0	5	11	5	10	8	21	18
2012-13	7	1	5	3	6	12	18	16
2013-14	4	1	12	3	11	2	27	6
2014-15	4	0	13	2	15	8	32	10
2015-16	7	2	8	0	13	3	28	5
2016-17	2	1	5	1	12	5	19	7
2017-18	5	3	4	3	9	2	18	8
2018-19	2	4	9	2	11	2	22	8
2019-20(p)	5	1	9	1	5	2	19	4

(p) Provisional data.

The chart below shows the number of deliberate fires in schools occurring each year, along with the associated percentage of fires in schools which were started deliberately. Since 2013-14, under a third of fires in schools each year were started deliberately.

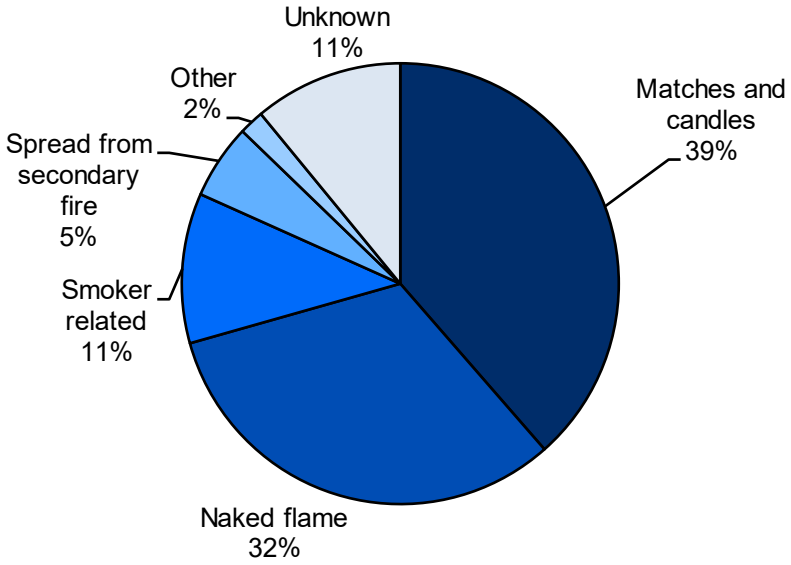
Chart 16: Percentage and number of deliberate fires in schools



(p) Provisional data.

Of the 109 deliberate fires in schools since 2010-11, 39% were started with matches or candles, 32% with a naked flame and 11% were smoker related. A further 11% have unspecified sources. In 2019-20, 2 were started with matches or candles, 1 with a naked flame and 1 was unknown.

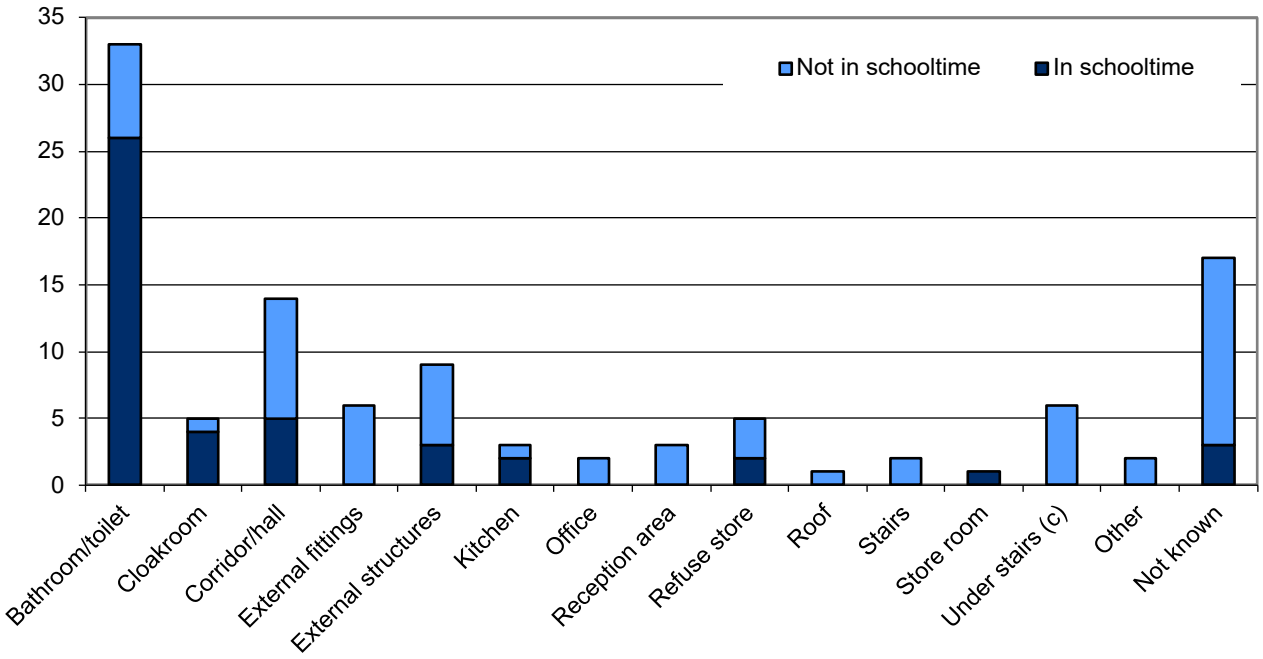
Chart 17: Source of ignition of deliberate primary fires in schools, 2010-11 to 2019-20(a)



(a) Since numbers of deliberate fires in schools are small, chart 17 is based on ten years of data from IRS (2010-11 to 2019-20).

Of the 109 deliberate fires in schools between 2010-11 and 2019-20, 46 (42%) occurred in school hours. Deliberate fires in schools occurred most frequently in bathrooms or toilets; of the fires starting here, almost four-fifths occurred during school hours.

Chart 18: Deliberate fires started in schools, by room and time, 2010-11 to 2019-20(a)(b)

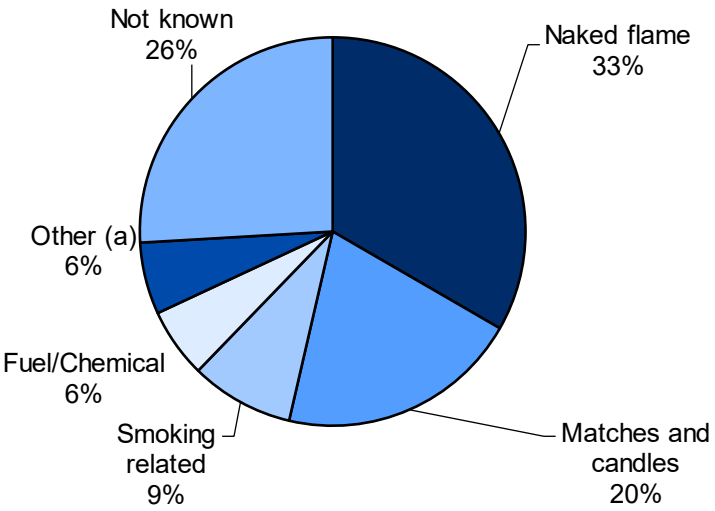


(a) School hours are 08:30- 15:59 and exclude weekends and the month of August.
(b) Since numbers of deliberate fires in schools are small, chart 18 is based on ten years of data from IRS (2010-11 to 2019-20).
(c) Enclosed, storage area.

Source and hazardous materials

Detailed information is only available for the source of primary fires. In the 5 years 2015-16 to 2019-20 there has been a total of 6,483 deliberate primary fires. During this period, the source of ignition in 33% of deliberate primary fires was a naked flame, and in 20% matches and/or candles. In each year these two categories have been the largest although the percentage due to matches and candles has noticeably dropped, from 45% in 2010-11 to 14% in 2019-20, and the number of fires attributable to this source has dropped 84%.

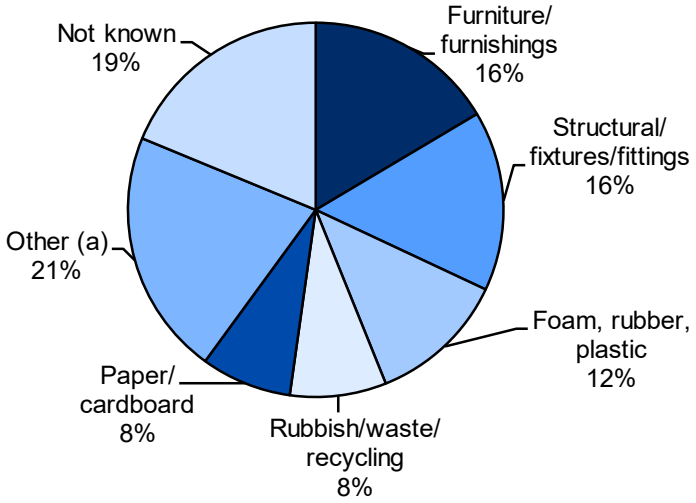
Chart 19: Source of ignition of deliberate primary fires, 2015-16 to 2019-20



(a) 'Other' includes 'spread from secondary fire', 'fireworks', 'cooking appliance', 'electricity supply', 'bombs and explosives', 'heating equipment', 'industrial equipment', 'other domestic style appliance' and 'wet hay'.

In the 6,483 deliberate primary fires for the combined years 2015-16 to 2019-20, furniture and furnishings was the material first ignited in 16% of incidents. In this period nearly 6 in 10 primary fires, where the first ignited item was furniture or furnishings, were started deliberately. More than half the number of fires, where the first ignited items were rubbish/waste/recycling or paper/cardboard, were started deliberately.

Chart 20: Materials first ignited in deliberate primary fires, 2015-16 to 2019-20



(a) 'Other' includes 'vegetation', 'clothing/textiles', 'explosives, gas, chemicals', 'wood', 'none', 'decoration/celebration', 'food' and 'animal'.

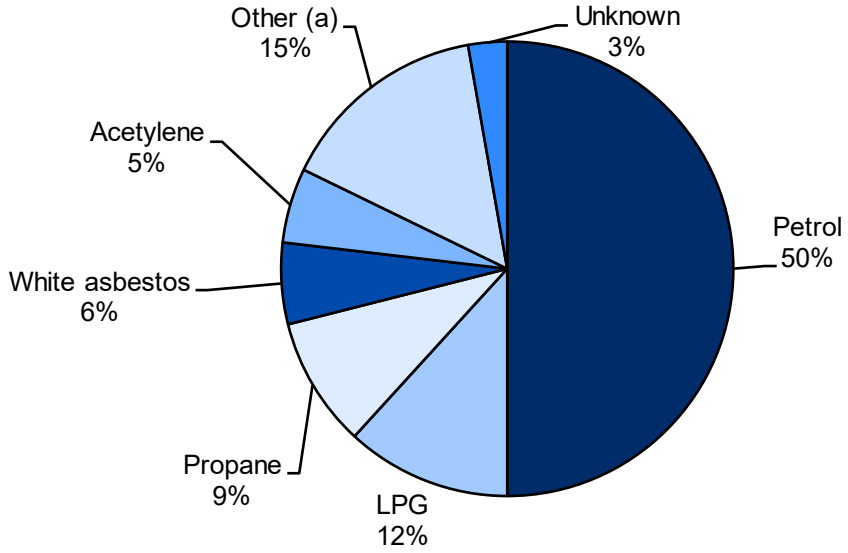
Of the 6,483 deliberate primary fires in the last 5 years, in 5,712 the cause of spread of the fire was identified; in 17% of all deliberate primary fires in this period spread due to furniture and furnishings and 15% spread due to structural fixtures and fittings (external and internal); a further 13% spread due to foam, rubber and plastic. In over a tenth of deliberate primary fires the cause of the spread was unknown.

In 14% of deliberate primary fires, rapid growth was recorded; petrol and oil products were found to be the cause in the majority of these cases, over two thirds in the last 5 years.

Deliberate primary fires tend to be single-seated, only 4% over the last 5 years have been multi-seated.

In the combined years 2015-16 to 2019-20, there were a total of 399 deliberate primary fires involving hazardous materials (6% of all deliberate primary fires), of which, 24 involved multiple hazardous materials. In total there were 432 instances of hazardous materials being involved in deliberate primary fires. The largest proportions of instances involved petrol (50%) and liquefied petroleum gas LPG (12%).

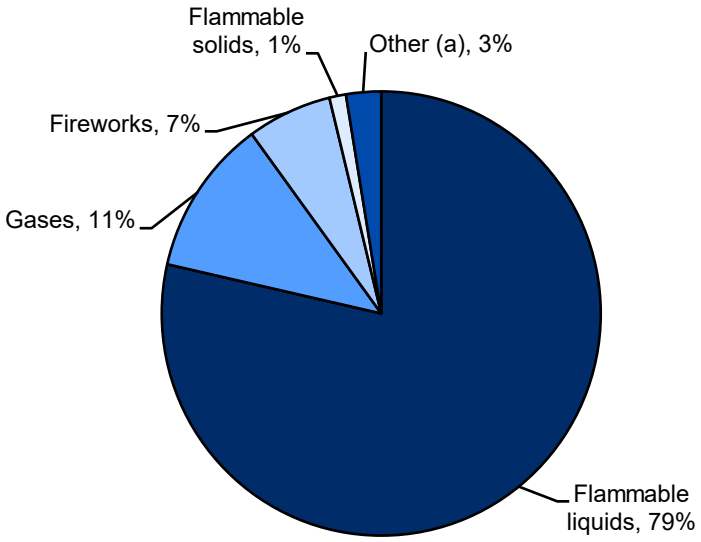
Chart 21: Hazardous materials involved in deliberate primary fires, 2015-16 to 2019-20



(a) 'Other' includes Oxygen, refrigerated liquid, kerosene, hydrochloric acid, sodium hydroxide solution, butane, methane, blue asbestos, ethanol, ammonia, hydrogen sulphide, turpentine, potassium chlorate, sulphuric acid, aerosols and carbon monoxide.

There were 1,825 instances of dangerous substances being involved in primary fires over the last 5 years, of these 737 (40%) were involved in deliberate primary fires. The majority of these involved 'flammable liquids' (79%), the next largest proportion was 'gases' (11%). These were also the largest categories in accidental primary fires although the percentages were closer (63% and 27% respectively).

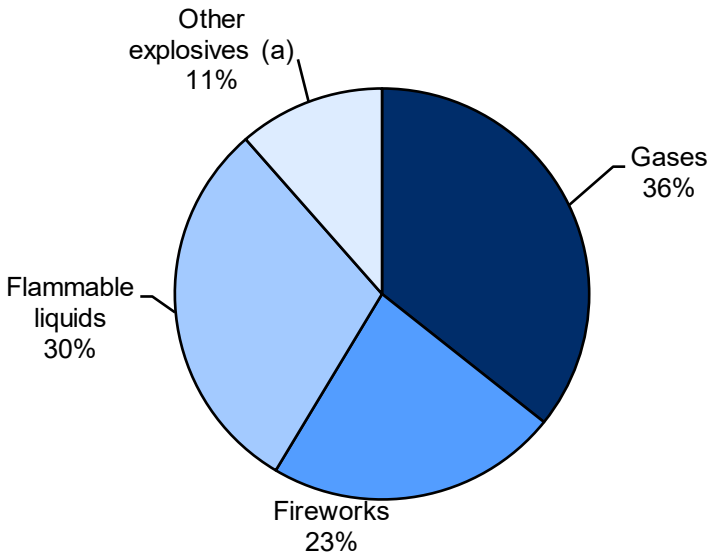
Chart 22: Dangerous substances in deliberate primary fires, 2015-16 to 2019-20



(a) 'Other' Includes other explosives, acetylene and ammunition.

There were 260 explosions involved in primary fires in the years 2015-16 to 2019-20. These may have occurred before the fire, during the fire, both before and during, or the sequence of events maybe unknown. Of these, 70 explosions (27%) were recorded in relation to deliberate fires. Gases caused the largest number of explosions (36%) in deliberate fires, whilst flammable liquids caused 30% and fireworks 23%. Gases were also the largest cause of explosions in accidental primary fires, equating to 47% during the same period. For most materials causing explosions, between 15% and 27% of fires were deliberate. However for fires where an explosion was due to fireworks, 89% were started deliberately.

Chart 23: Materials causing explosions in deliberate primary fires, 2015-16 to 2019-20



(a) 'Other explosives' includes acetylene, ammunition, flammable solids and 'other'.

Casualties

There were 5 fatalities and 69 non-fatal casualties due to deliberate fires in 2019-20. Around 6 in 10 non-fatal casualties from deliberate fires in 2019-20 occurred in dwellings. Cumulatively, over the last 5 years around 1 in 5 fatalities and 1 in 8 non-fatal casualties in fires occurred in deliberate fires.

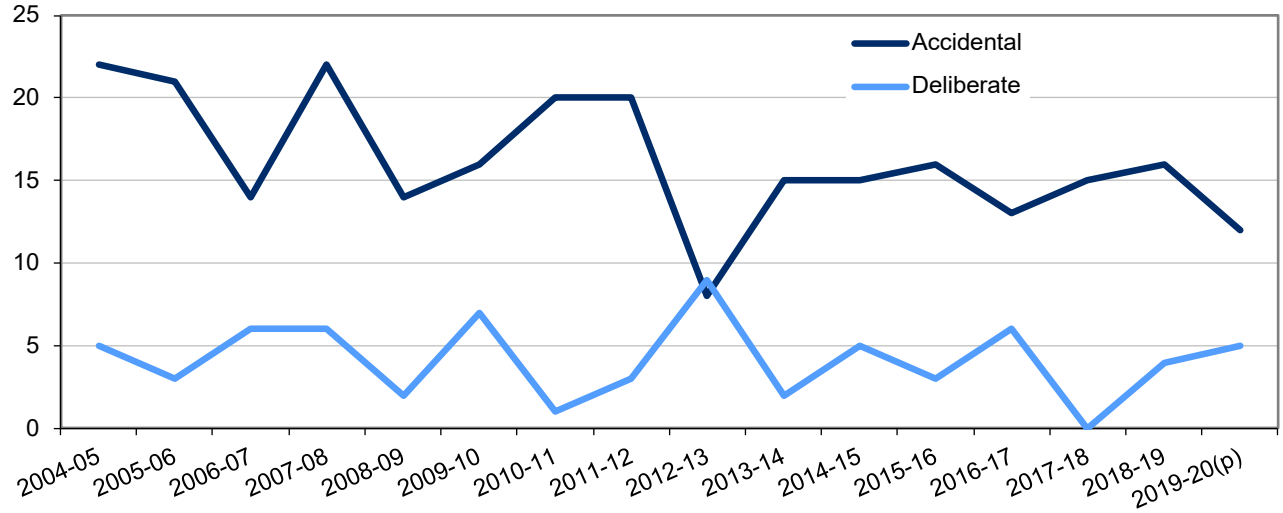
Table 9: Number of casualties in deliberate fires, by location

	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20(p)
Dwellings										
Fatal	1	0	8	1	4	1	1	0	1	1
Non-fatal	31	49	30	51	32	40	48	31	48	42
Other buildings										
Fatal	0	1	0	0	0	2	0	0	1	1
Non-fatal	13	6	1	18	4	14	18	10	17	16
Road vehicles										
Fatal	0	0	0	1	1	0	2	0	2	3
Non-fatal	5	4	4	3	2	3	4	0	5	2
Other										
Fatal	0	2	1	0	0	0	3	0	0	0
Non-fatal	5	10	5	1	3	5	5	6	8	9
All										
Fatal	1	3	9	2	5	3	6	0	4	5
Non-fatal	54	69	40	73	41	62	75	47	78	69

(p) Provisional data.

For most of the years shown in the chart below, deliberate fires accounted for fewer than half the number of fatalities compared with those from accidental fires. The exception was 2012-13 when fatalities from deliberate fires outnumbered those from accidental fires (due to a combination of a relatively high number of fatalities from deliberate fires and a low number from accidental fires).

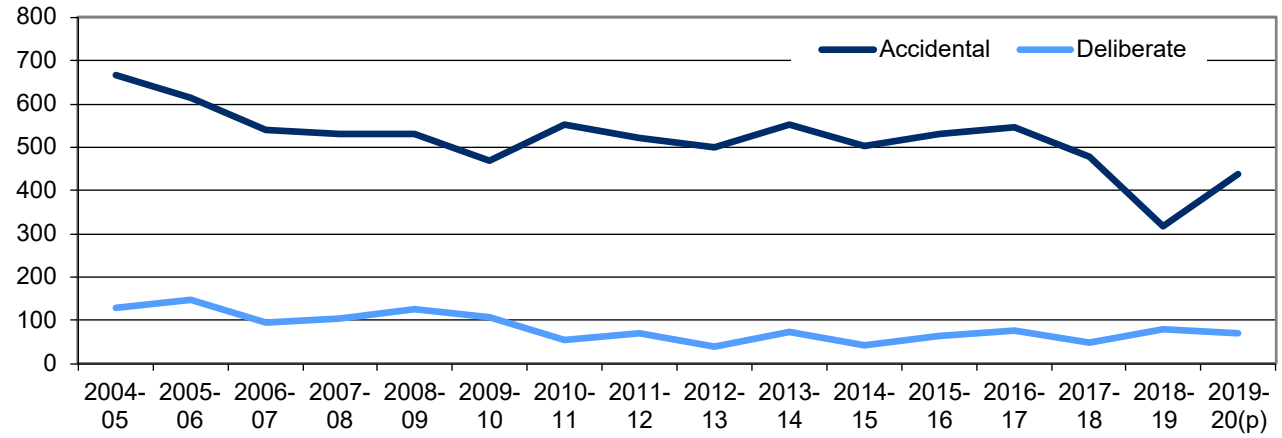
Chart 24: Number of fatalities in fires, by motive



(p) Provisional data.

In the years 2004-05 to 2009-10 there were on average 117 non-fatal casualties resulting from deliberate fires each year. In the 10 years since then, the average has fallen to 61 a year. This equates to 11% of all non-fatal casualties from fires in this period. In 2019-20 there were 69 casualties, 9 fewer than in 2018-19.

Chart 25: Number of non-fatal casualties in fires, by motive



(p) Provisional data.

In 2019-20, 27 non-fatal casualties (39%) from deliberate fires went to hospital. Of the 22 who were judged to have slight injuries, 9 were overcome by gas or smoke.

Table 10: Number and percentage of non-fatal casualties by nature of injury sustained in deliberate fires

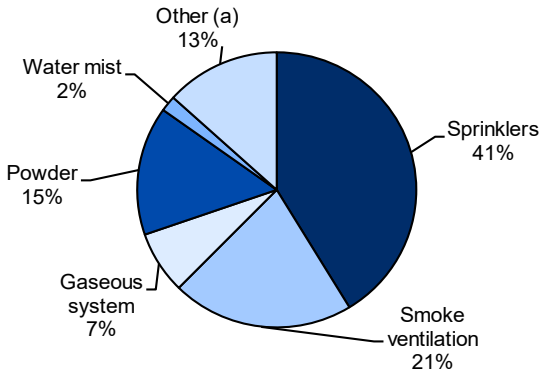
	Number					Percentage				
	2015-16	2016-17	2017-18	2018-19	2019-20(p)	2015-16	2016-17	2017-18	2018-19	2019-20
First aid (a)	**20**	**23**	**17**	**14**	**14**	**32**	**31**	**36**	**18**	**20**
Precautionary check recommended	**8**	**30**	**10**	**19**	**28**	**13**	**40**	**21**	**24**	**41**
Slight injuries (b)	**31**	**15**	**17**	**35**	**22**	**50**	**20**	**36**	**45**	**32**
Burns	4	1	2	6	5	6	1	4	8	7
Burns and overcome by gas or smoke	0	0	0	1	0	0	0	0	1	0
Overcome by gas or smoke	22	12	9	20	9	35	16	19	26	13
Physical injury	0	1	0	3	1	0	1	0	4	1
Shock	0	0	1	1	1	0	0	2	1	1
Other medical	3	1	5	2	3	5	1	11	3	4
Other/not known	2	0	0	2	3	3	0	0	3	4
Serious injuries (c)	**3**	**7**	**3**	**10**	**5**	**5**	**9**	**6**	**13**	**7**
Burns	1	4	2	3	1	2	5	4	4	1
Burns and overcome by gas or smoke	1	0	0	0	0	2	0	0	0	0
Overcome by gas or smoke	0	2	0	4	2	0	3	0	5	3
Physical injury	1	0	1	2	0	2	0	2	3	0
Shock	0	0	0	0	0	0	0	0	0	0
Other	0	1	0	1	2	0	1	0	1	3
All casualties sent to hospital	**34**	**22**	**20**	**45**	**27**	**55**	**29**	**43**	**58**	**39**
All non-fatal casualties	**62**	**75**	**47**	**78**	**69**	**100**	**100**	**100**	**100**	**100**

(a) First aid given at scene.
(b) Casualty went to hospital, injuries appear to be slight.
(c) Casualty went to hospital, injuries appear to be serious.
(p) Provisional data.

Prevention

The data in this section looks at safety systems present in accidental and deliberate fires, since numbers in deliberate fires alone are small (in the last ten years there have been 89 safety systems recorded present in deliberate fires). In the aggregated figures for the last 5 years, fire safety systems were present at 211 accidental and deliberate primary building fires. However, some buildings have more than one system and there were a total of 218 safety systems present at primary fires. Sprinklers made up 41% of these safety systems. 29% of these primary fires where safety systems were present were deliberate. Throughout the time series sprinklers have been to most common safety system in use.

Chart 26: Safety systems present at primary fires in buildings, by system type, 2015-16 to 2019-20



(a) 'Other System' includes 'Drencher', 'Pressurisation', and 'Foam'.

For the aggregated years 2015-16 to 2019-20, where safety systems were present, almost 6 in 10 operated correctly (although not all of these raised the alarm). Where systems failed to operate, almost two fifths of cases were due to the fire occurring in an area not covered by the safety system.

Looking specifically at deliberate fires (not shown in the table), there were 61 deliberate fires in buildings in the years 2015-16 to 2019-20 where safety systems were present; due to buildings with multiple safety systems in place, the operation (or inaction) of 64 safety systems were recorded and 21 safety systems in deliberate fires were recorded as not operating.

Table 11: Number of safety systems in building fires, by operation and failure reason(a)

	2015-16	2016-17	2017-18	2018-19	2019-20(p)
Operated and raised alarm	**17**	**15**	**23**	**22**	**28**
Operated, but did not raise alarm	**6**	**5**	**4**	**1**	**8**
Did not operate	**17**	**20**	**22**	**12**	**18**
Fire in area not covered by system	6	12	8	3	6
Fault in system	0	1	0	0	0
System damaged by fire	0	0	1	0	0
System turned off	0	1	0	0	0
System not set up correctly	0	0	0	0	0
Other	9	6	9	7	9
of which insufficient heat to activate system (b)	*5*	*4*	*5*	4	5
Not known	2	0	4	2	3
Not applicable	0	0	0	0	0

(a) The table refers to the number of safety systems not the number of accidental and deliberate fires in buildings. Data includes some instances where more than one safety system was present at a fire.
(b) Includes fires which were too small to be detected. Derived from a 'free text' field which defines 'other' reasons for system failure.
(p) Provisional data.

In 2019-20 there were smoke alarms present in 67% of accidental primary dwelling fires, and 58% of deliberate dwelling fires. For other buildings in 2019-20, smoke alarms were present in 58% of primary accidental and deliberate fires.

Table 12: Number of primary fires in buildings, by presence of smoke alarms and motive

	Accidental					Deliberate				
	2015-16	2016-17	2017-18	2018-19	2019-20(p)	2015-16	2016-17	2017-18	2018-19	2019-20(p)
Dwelling										
No alarm	462	529	483	509	489	72	59	56	45	55
Alarm present(a)	1,147	1,190	1,002	921	1,008	94	80	76	80	75
All primary fires (a)	**1,609**	**1,719**	**1,485**	**1,430**	**1,497**	**166**	**139**	**132**	**125**	**130**
Other building										
No alarm	254	229	259	287	251	167	185	148	132	113
Alarm present(a)	447	436	407	376	350	95	81	108	86	155
All primary fires (a)	**701**	**665**	**666**	**663**	**601**	**262**	**266**	**256**	**218**	**268**

(a) Includes where it was not known whether the building had a smoke alarm.
(p) Provisional data.

At deliberate dwelling fires in 2019-20 where smoke alarms were present, 75% of smoke alarms successfully operated. In accidental dwelling fires 79% of smoke alarms operated correctly. In deliberate other building fires 84% of smoke alarms operated correctly, whilst for accidental fires in other buildings the proportion was 81%.

Table 13: Number of smoke alarms present at primary fires in buildings, by operation (a)

	Accidental					Deliberate				
	2015-16	2016-17	2017-18	2018-19	2019-20(p)	2015-16	2016-17	2017-18	2018-19	2019-20(p)
Dwelling										
Alarm present but did not operate	271	269	232	194	208	30	18	19	23	17
operated:										
and raised alarm	661	700	582	559	636	47	42	34	37	40
but did not raise alarm	189	197	174	151	159	13	14	17	18	12
Total (a)	**1,121**	**1,166**	**988**	**904**	**1,003**	**90**	**74**	**70**	**78**	**69**
Other building										
Alarm present but did not operate	103	94	88	73	61	17	11	13	9	24
operated:										
and raised alarm	259	263	249	244	229	62	48	71	60	112
but did not raise alarm	54	43	50	32	34	9	9	10	8	14
Total (a)	**416**	**400**	**387**	**349**	**324**	**88**	**68**	**94**	**77**	**150**

(a) The table refers to the number of smoke alarms, rather than the number of fires and so where buildings have multiple alarms, all have been included. For this reason figures may not match between tables 12 and 13. Table only refers to alarms which were known to be present.
(p) Provisional data.

Great Britain comparisons

The table below shows the number of deliberate primary and secondary fires in England, Scotland and Wales. Compared with 2001-02 Wales has seen a marginally larger reduction in the number of deliberate fires, 77%, whilst the figure in England fell by 76%; in Scotland the number fell by 67%. However between 2018-19 and 2019-20 the number of deliberate fires has fallen in Wales (down 20%) in England (down 16%) and in Scotland (down 6%). Of all the categories in the table below only deliberate primary fires in Wales saw an increase, albeit of 2 fires.

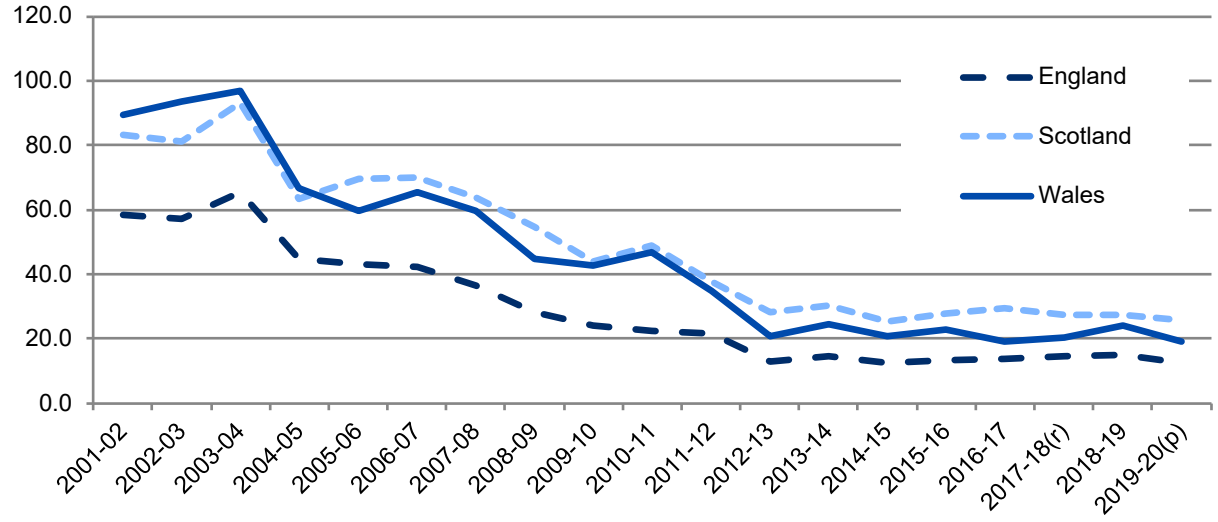
Table 14: Number of deliberate fires in England, Scotland and Wales

	England (a)			Scotland (b)			Wales		
	Primary	Secondary	All(c)	Primary	Secondary	All(c)	Primary	Secondary	All(c)
2010-11	29,470	87,321	116,812	4,085	21,602	25,691	2,484	11,812	14,297
2011-12	26,730	88,795	115,541	3,780	16,198	19,980	2,051	8,596	10,648
2012-13	19,432	49,309	68,760	2,833	12,252	15,085	1,405	4,993	6,399
2013-14	17,935	59,700	77,673	2,581	13,446	16,029	1,345	6,224	7,569
2014-15	17,366	51,133	68,521	2,413	11,167	13,582	1,214	5,220	6,434
2015-16	19,370	54,280	73,671	2,587	12,278	14,870	1,370	5,757	7,127
2016-17	22,066	54,066	76,148	2,695	13,192	15,890	1,394	4,540	5,935
2017-18(r)	21,497	59,063	80,592	2,736	12,113	14,851	1,199	5,174	6,374
2018-19	19,778	63,440	83,246	2,503	12,484	14,989	1,259	6,262	7,523
2019-20(p)	19,158	50,672	69,846	2,438	11,649	14,089	1,261	4,792	6,054

(a) Data for England are taken from The Home Office publication Fire Statistics: England
(b) Data for Scotland are taken from Scottish Fire and Rescue Service
(c) Includes a small number of deliberate chimney fires.
(r) Revised data
(p) Provisional data.

The chart below shows rates of deliberate fires in Wales and Scotland have consistently been higher than in England, although the gap has narrowed in recent years. All three countries have seen a general downward trend since 2001-02 although since 2012-13 figures have somewhat plateaued.

Chart 27: Rate of deliberate fires in England, Scotland and Wales per 10,000 population (a)



(a) Population data are taken from ONS Mid-Year Estimates and are revised periodically and so rates are subject to change between publications.
(r) Revised data
(p) Provisional data

Glossary

Accidental fires include those where the cause was not known or unspecified.

Buildings are defined as all buildings including those under construction, but excluding derelict buildings, or those under demolition. Prior to 1994 'buildings' were referred to as 'occupied buildings'.

The **cause of fire** is the defect, act or omission leading to ignition of the fire.

Chimney fires are any fires in occupied buildings where the fire was confined within the chimney structure (and did not involve casualties or rescues or attendance by five or more appliances).

Dangerous substances can spread fire, intensify fire, intensify smoke, render water unsuitable or produce toxic gases. Unlike with the hazardous materials dangerous substances may be grouped into one of the following categories: Fireworks, Acetylene, Ammunition, Other explosives, Gases, Flammable liquids or Flammable solids.

Deliberate fires include those where deliberate ignition is merely suspected.

Dwellings are defined as buildings occupied by households, excluding hotels, hostels and residential institutions (these fall under 'other residential'). From 1988, mobile homes have been specifically included in the dwelling count. In 2000, the definition of a dwelling was widened to include any non-permanent structures used solely as a dwelling, such as caravans, houseboats etc.

Explosion An explosion is a very rapid build up of pressure giving rise to a characteristic 'bang'. The pressure may be sufficient to cause injury to people and structural damage to buildings. Explosions may result from gas leaks, including unburnt fire gases, or from overheated cylinders or unstable solid materials.

False alarms are events in which the Fire and Rescue Service believes they are called to a reportable fire and then find there is no incident**.**

Fatal casualty is a person whose death is attributed to a fire even if the death occurred weeks or months later. There are also occasional cases where it transpires subsequently that fire was not the cause of death. The figures for fatalities are thus subject to revision.

Fire Data Reports (FDR1 and FDR3) were the method of data collection via paper forms prior to the Incident Recording System (introduced in April 2009). FDR1 was used to record primary fires, FDR3 for secondary fires, chimney fires and false alarms.

Fire and Rescue Authorities (FRA) are the three regions (North Wales, Mid and West Wales and South Wales) into which Wales is divided in relation to the fire service.

Hazardous Materials are recorded as individual items (solids, liquids or gases) that can harm people, other living organisms, property, or the environment. Each material has a numeric UN 4 digit numeric code, which can be found in the Dangerous Goods Emergency Action Codes List book.

Incident Recording System (IRS) is the electronic based system for recording fires, false alarms and Special Service Incidents. IRS replaced the FDR1 and FDR3 paper forms in April 2009.

Late fire call is a fire known to be extinguished when the call was made (or to which no call was made, e.g. a fire which comes to the attention of the fire and rescue service as a result of a press report or inquest) and which the fire and rescue service attended.

Location is the type of premises, property or countryside in which the fire started. This is not necessarily the type of premises in which most casualties or damage occurred as a result of the fire.

Non-fatal casualties are recorded as being in one of four classes of severity as follows:

(i) Victim went to hospital, injuries appear to be serious

(ii) Victim went to hospital, injuries appear to be slight

(iii) First aid given at scene

(iv) Precautionary check recommended – this is when an individual is sent to hospital or advised to see a doctor as a precaution, having no obvious injury or distress.

Non-fatal casualties marked as 'not fire-related' have not been excluded due to widespread inappropriate use of this field.

Primary fires include all fires in non-derelict buildings, vehicles and outdoor structures or any fire involving casualties, rescues, or fires attended by five or more appliances.

Reportable fire is an event of uncontrolled burning involving flames, heat or smoke and which the fire and rescue service attended.

Secondary fires are the majority of outdoor fires including grassland and refuse fires unless they involve casualties or rescues, property loss or five or more appliances attend. They include fires in single derelict buildings. They are reported in less detail than other fires and consequently less information concerning them is available.

Source of ignition is the source of the flame, spark or heat that started the fire.

Key quality information

The analysis in this bulletin relates to fire and rescue service incidents between April 2019 and end March 2020 and therefore covers a period largely prior to the Coronavirus (Covid-19) pandemic, and the lockdown measures introduced on 23 March 2020.

On 10 November 2004 the Fire and Rescue Services Act 2004, which devolved fire and rescue services to the National Assembly for Wales, was brought into effect. In Wales, these services are provided by three Fire and Rescue Authorities (FRAs). The three FRAs cover varied geographical areas with a wide variety of risks including: fires in homes; outdoor fires; fires in business premises; road traffic collisions; rail or air crashes; chemical spills; building collapses; and trapped people or animals.

North Wales Fire and Rescue Authority provides cover for a population of almost 700,000 across a geographical area of 2,400 square miles. It employs over nearly 900 operational and non-operational support staff from its headquarters and its 44 fire stations.

Mid and West Wales Fire and Rescue Authority covers over half the area of Wales and a population of over 910,000. There are 58 fire stations and over 1,300 employees.

South Wales Fire and Rescue Authority serves a population of over 1.5 million people covering 1,085 square miles. It employs over 1,800 staff including around 1,400 fire-fighters who operate from 47 fire stations throughout South Wales.

Wales Arson Reduction Strategy

The Joint Arson Group produced the Wales Arson Reduction Strategy in 2007 (it was reviewed in 2009 with an update strategy for 2012-15 published in 2012). The strategy states the priorities of Welsh Arson Reduction Teams (ARTs) are to reduce the numbers of wildfire incidents, deliberate fires in schools, car arson, deliberate fires associated with anti-social behaviour and the number of void and derelict buildings subject to arson. The Wales Arson Reduction Strategy in 2007 proposed measures to reduce the number of deliberate grassland and forest fires.

These include:

- National Curriculum to include “care of the environment”, educating children on the issue outside of the classroom
- several initiatives seek to address this issue i.e. the All Wales School Liaison Core Programme, Crucial Crew, Forest Schools Safety Zone
- implement initiatives which bestow ownership and a sense of pride in communities regarding their immediate environment
- key partnerships should work together to provide a consistent message on grass and forest fires
- youth groups must be supported to deliver diversionary activities for young people during school holidays and to deliver a message on the responsible use of fire.

Relevance

The tables and charts in this bulletin attempt to show the breadth of data available and some of the possible analyses.

The Welsh Government uses the information in this bulletin to monitor the trends in deliberate fires occurring in Wales, for example those occurring in dwellings and on grassland. This helps to monitor the effectiveness of current policy, and for future policy development. The data are also used as evidence for national fire safety initiatives and campaigns.

The data are used by the fire and rescue services for comparisons and benchmarking. The data aids the allocation of resources and providing community safety projects.

Accuracy

Since April 2009 incident data (relating to fires, false alarms and Special Service Incidents) have been submitted by the Fire and Rescue Authorities via the Incident Recording System (IRS). On 5 January 2016 responsibility for fire and rescue policy in England transferred from the Department for Communities and Local Government (CLG) to the Home Office, this resulted in IRS also being held by the Home Office. IRS does not currently collect data from FRAs in Northern Ireland.

Prior to IRS data were collected via the paper based forms FDR1 and FDR3. The change in collection method has allowed a greater volume of data to be captured:

- Data on Special Service Incidents are now recorded
- All fires are recorded; pre-IRS statistics were based on a sampled dataset.
- Some detail on secondary fires and chimney fires are now recorded; pre-IRS, only aggregates were previously available.

For further details of the information collected and held on IRS please see 'Further details'.

The incident data are extracted from IRS annually (around June/July) and marked provisional at first publication. All bulletins and StatsWales tables excluding the quarterly data published in January/February are based on this dataset. Due to the nature of the live system, whilst accurate at the time of extraction, totals may change and therefore be revised due to updated information. 2019-20 data are currently marked as provisional and may be revised in future publications.

A key piece of information that the IRS collects for all incidents is the accurate incident location. For all incidents it is mandatory to have the grid location (easting and northing co-ordinates), in addition for addressable locations the address details can be recorded.

Within the IRS forms system, for addressable locations the user locates the address using a gazetteer and this determines the co-ordinates. For non-addressable locations the user will either select the location on a map or use a mobile data terminal to determine the location.

Rounding and symbols

Data collected via the FDR1 and FDR3 paper forms (i.e. data prior to 2009-10) are based on sampled datasets. Items and totals have been rounded separately to the nearest final digit, and therefore totals shown may differ slightly from the sum of the items. No rounding has been applied to data from 2009-10 onwards.

The following symbols may have been used in this release.

- negligible (less than half the final digit shown)

. not applicable

.. not available

~ not available yet

* disclosive or not sufficiently robust for publication

p provisional

r revised

Timeliness and punctuality

All outputs adhere to the Code of Practice by pre-announcing the date of publication through the through the Due Out Soon part of the UK Government Statistics and research web pages and the Publication Hub. Furthermore, should the need arise to postpone an output this would follow the Welsh Government's Revisions, Errors and Postponements arrangements.

Data for this bulletin are taken from the same dataset as the annual Fire Statistics and the Grassland fires bulletin which is extracted in June or July each year. This bulletin is published biennially, and the previous bulletin had been brought forward to November from previous publications in February. However, publication has been delayed this year due to the Coronavirus (Covid-19) pandemic impacting resources available in Fire and Rescue Services as well as Welsh Government analytical services.

Accessibility and clarity

Welsh fire statistics are published in an accessible, orderly, pre-announced manner on the Welsh Government website at 9:30am on the day of publication. An RSS feed alerts registered users to this publication. All releases are available to download for free.

In our outputs, we aim to provide a balance of commentary, summary tables, charts and maps. The aim is to 'tell the story' in the output, without the output becoming overly long and complicated. We provide additional, detailed data on StatsWales.

Comparability and coherence

Since 2009-10 the three Fire and Rescue Authorities have recorded all their fire incidents using the IRS. This may affect some of the incident categories especially when data are compared with years prior to 2009-10. Following a quality assurance exercise carried out by CLG on the 2009-10 and 2010-11 two possible discontinuities (due to the change in data collection method) were discovered. One relates to types of incident, notably outdoor primary fires and the second to non-

fatal casualties. More information is given on this subject in the Comparability section of Fire Statistics publication

Numbers of non-fatal casualties presented in this bulletin include those recorded as 'not fire related'. This is the result of an exercise CLG undertook which found that the 'not fire related' casualty marker had been widely misused. Data published by the Home Office for England and the Scottish Fire and Rescue Service for Scotland also include these casualties. However the second performance indicator (FRS/RRC/S/002) listed in Fire and Rescue Authority performance 2015-16 exclude those casualties and so the data are not directly comparable.

The Fire Statistics Quality Report covers the general principles and processes leading up to the production of our fire statistics. The report covers various topics including definitions, coverage, timeliness, relevance and comparability.

UK Comparisons

Whilst England and Scotland do not publish specific deliberate fires bulletins, data by motive are available in their annual publications.

Data for England (published by the Home Office since April 2016):

Fire statistics England

Fire statistics monitor

Data for Scotland (published by Scottish Fire and Rescue Service since 2015)

Scottish Fire and Rescue Incident Statistics

Pre 2014-15 data

Limited Northern Ireland data are available in an annual report from by Northern Ireland Fire and Rescue Service)

Other data sources

Deliberate fires include those where the motive for the fire was 'thought to be' or 'suspected to be' deliberate. This includes fires to an individual's own property, others' property or property of an unknown owner. Deliberate fires are not the same as arson. Arson is defined under the Criminal Damage Act of 1971 as 'an act of attempting to destroy or damage property, and/or in doing so, to endanger life'. Table 15 shows a comparison between the numbers of arson incidents as recorded by the police and the number of deliberate primary and secondary fires. It is expected that the majority of deliberate secondary fires would not be counted as arson.

Table 15: Comparison of police recorded crime and fire and rescue service fire incident data in Wales

	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16(r)	2016-17(r)	2017-18(r)	2018-19	2019-20
Police Recorded Crime (c)										
Arson	1,734	1,514	1,244	1,163	1,243	1,505	1,632	1,949	2,769	2,112
Fire and Rescue										
Deliberate Primary	2,484	2,051	1,405	1,345	1,214	1,370	1,394	1,199	1,259	1,261
Deliberate Secondary	11,812	8,596	4,993	6,224	5,220	5,757	4,540	5,174	6,262	4,792
Total	14,297	10,648	6,399	7,569	6,434	7,127	5,935	6,374	7,523	6,054

Source: Arson data from the Home Office, fire data from FDR1 and FDR3 fire and Rescue Forms, Incident Reporting System (from 2009-10)
(a) From 2008-09 arson figures are the sum of 'Arson endangering life' and 'Arson not endangering life', and so may not be comparable with earlier data.
(b) In April 2009 collection of fire data changed from the FDR1 and FDR3 paper forms to the Incident Recording System (IRS).
(c) Following an assessment of crime statistics by the UK Statistics Authority, published in January 2014, the statistics based on police recorded crime data were found not to meet the required standard for designation as National Statistics.

National Statistics status

The United Kingdom Statistics Authority has designated these statistics as National Statistics, in accordance with the Statistics and Registration Service Act 2007 and signifying compliance with the Code of Practice for Statistics.

National Statistics status means that official statistics meet the highest standards of trustworthiness, quality and public value.

All official statistics should comply with all aspects of the Code of Practice for Statistics. They are awarded National Statistics status following an assessment by the UK Statistics Authority's regulatory arm. The Authority considers whether the statistics meet the highest standards of Code compliance, including the value they add to public decisions and debate.

It is Welsh Government's responsibility to maintain compliance with the standards expected of National Statistics. If we become concerned about whether these statistics are still meeting the appropriate standards, we will discuss any concerns with the Authority promptly. National Statistics status can be removed at any point when the highest standards are not maintained, and reinstated when standards are restored.

The statistics last underwent a full assessment against the Code of Practice in June 2012 (Report number 208).
Since the review by the UKSA, we have continued to comply with the Code of Practice for Statistics, and have made the following improvements:

- brought forward the publication date improving timeliness
- added Local Authority analysis
- extended the use of weather data
- improved Key Quality information
- publication of excel tables alongside the bulletin

Well-being of Future Generations Act (WFG)

The Well-being of Future Generations Act 2015 is about improving the social, economic, environmental and cultural well-being of Wales. The Act puts in place seven well-being goals for Wales. These are for a more equal, prosperous, resilient, healthier and globally responsible Wales, with cohesive communities and a vibrant culture and thriving Welsh language. Under section (10)(1) of the Act, the Welsh Ministers must (a) publish indicators ("national indicators") that must be applied for the purpose of measuring progress towards the achievement of the Well-being goals, and (b) lay a copy of the national indicators before Senedd Cymru. The 46 national indicators were laid in March 2016.

Information on the indicators, along with narratives for each of the well-being goals and associated technical information is available in the Well-being of Wales report.

Further information on the Well-being of Future Generations (Wales) Act 2015.

The statistics included in this release could also provide supporting narrative to the national indicators and be used by public services boards in relation to their local well-being assessments and local well-being plans.

Further details

This document is available at: https://gov.wales/deliberate-fires

Fire Statistics Data Quality Report

Incident Recording System Questions and Lists

More information is available on StatsWales.

Analysis of annual Welsh fire incident data can be found in the bulletin 'Fires Statistics, 2017-18':

The bulletin includes charts and information on causes of fires and the presence of smoke alarms.

The report 'Evaluation of the Arson Prevention Programme' focuses on three of the main initiatives; Arson Reduction Teams (ARTs); the Arson Small Grants Programme; and the Grassland Fire Initiative.

Next update

Deliberate Fires 2019-20 to be published in November 2020

We want your feedback

We welcome any feedback on any aspect of these statistics which can be provided by email to stats.inclusion@gov.wales

Open Government Licence