ystadegau ar gyfer cymru statistics for wales

Statistical Bulletin

Llywodraeth Cymru Welsh Government

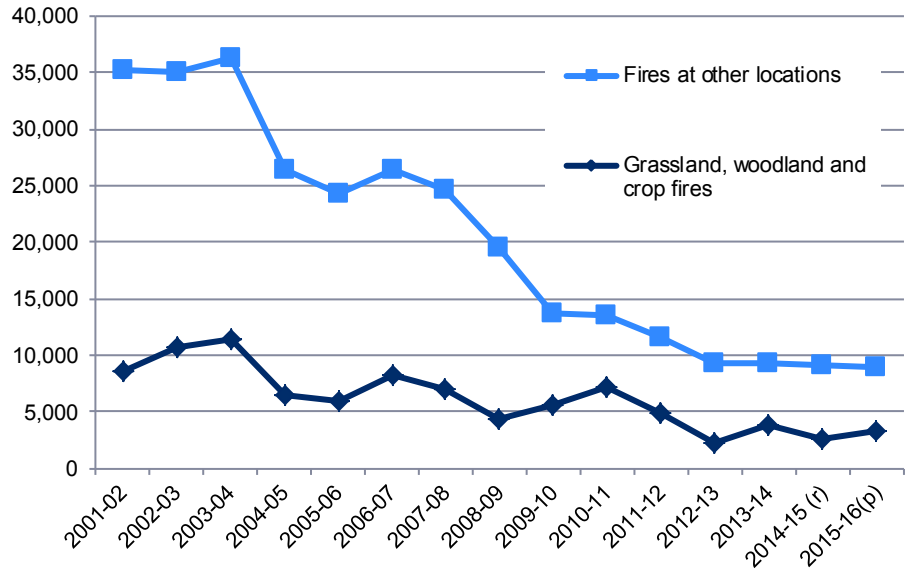
Grassland fires 2015-16

16 Feb 2017
SB 11/2017

Around one sixth of Fire and Rescue Authority (FRA) attendances at fires or false alarms in 2015-16 were due to grassland, woodland or crop fires.

The Welsh FRAs attended 3,216 grassland, woodland and crop fires in 2015-16, up 23 per cent on the 2014-15 figure. The number of these fires is prone to fluctuation and the 2015-16 figure follows a period of instability in these numbers. The 2015-16 figure is the third lowest in the time series (from 2001-02).

Chart 1 Numbers of fires on grassland, woodland and crops and other locations



• In 2015-16, over four fifths of fires on grassland, woodland and crops were started deliberately. (Table 4)

• In 2015-16, 46 per cent of grassland, woodland and crop fires occurred in April 2015, more than double the proportion and number in that month in 2014-15. Met Office weather data shows this month also saw around half the amount of rainfall than in April 2014, and almost 50 per cent more hours of sunshine. (Table 5)

About this bulletin

This bulletin examines the impact and patterns in grassland fires in the financial years 2001-02 to 2015-16, where the 2015-16 are currently provisional. The Welsh Government compiles these statistics from reports on all fires attended submitted by all three Fire and Rescue Authorities (FRAs) in Wales to the Home Office.

In this bulletin

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Section 1: 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.

For the definition of chimney fires please see the Glossary.

This section looks at the total number of grassland, woodland and crop fires that occurred as well as the total number of fires attended, which includes false alarms.

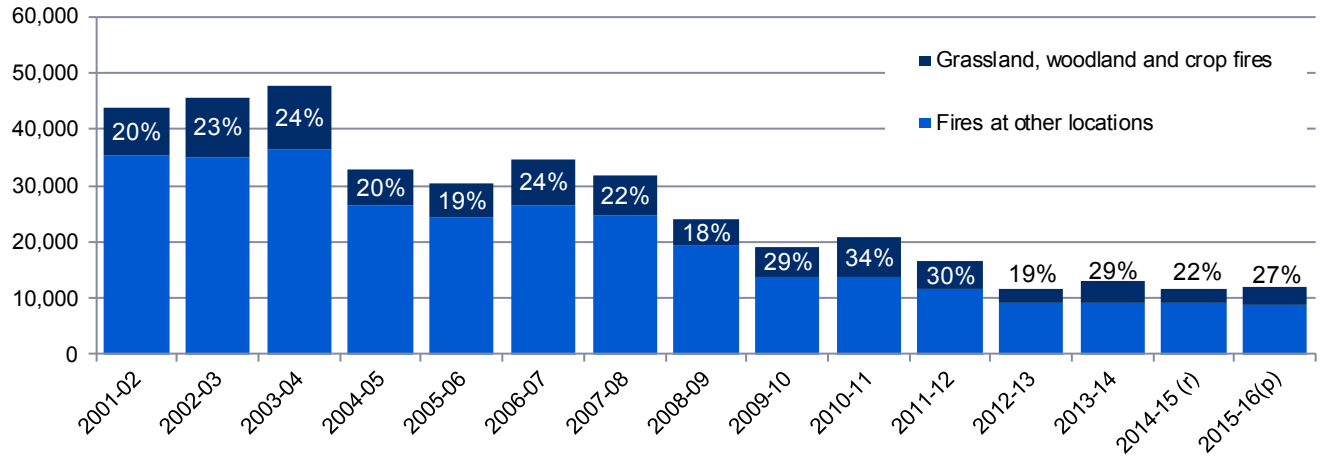
Welsh FRAs attended 26,609 fires or false alarms in 2015-16. Of these, 16 per cent or 4,330 (including 1,114 false alarms) were due to grassland, woodland and crop fires. These fires include primary fires in allotments, gardens, crops, woods and other agricultural locations and secondary fires on heathland and as a result of intentional straw and stubble burning, as well as fires on grassland.

In 2015-16 the number of grassland, woodland and crop fires (excluding false alarms) attended by the Welsh FRAs rose by 23 per cent compared with 2014-15. However the number is 14 per cent lower than 2013-14 and 63 per cent lower than in 2001-02. Fires in locations other than grassland, woodland and crops fell by 2 per cent (compared with 2014-15) and by 75 per cent (compared with 2001-02). Charts 1 and 2 show how the number of fires (and of those, grassland, woodland and crop fires) varies each year. The number of grassland, woodland and crop fires for 2015-16 is the third lowest since 2001-02.

Of the 12,111 fires attended in Wales, 3,216 (27 per cent) occurred on grassland, woodland and crops.

The chart below shows the proportion of fires attended which occurred on grassland, woodland or crops. The proportion of fires occurring on grassland range from a low of 18 per cent (2008-09) up to 34 per cent in 2010-11.

Chart 2 Number of fires attended by Fire and Rescue Authorities in Wales, by location



(r) Revised data
(p) Provisional data

Table 1 Number of grassland, woodland and crop fires and false alarms, by type of fire

	2011-12	2012-13	2013-14	2014-15(r)	2015-16(p)
Primary fires	5,687	4,745	4,790	4,561	4,681
of which were grassland, woodland and crops	*256*	*63*	*128*	*84*	*118*
Secondary fires	10,162	5,922	7,801	6,541	6,998
of which were grassland, woodland and crops	*4,642*	*2,082*	*3,748*	*2,529*	*3,098*
All fires	**16,464**	**11,438**	**13,169**	**11,651**	**12,111**
of which were grassland, woodland and crop fires	***4,898***	***2,145***	***3,876***	***2,613***	***3,216***
False alarms	15,874	15,088	15,312	15,485	14,498
False alarms with location recorded as grassland, woodland or crops	*1,483*	*823*	*1,156*	*1,028*	*1,114*
All fires and false alarms	**32,338**	**26,526**	**28,481**	**27,136**	**26,609**
of which grassland, woodland and crop fires and false alarms	***6,381***	***2,968***	***5,032***	***3,641***	***4,330***

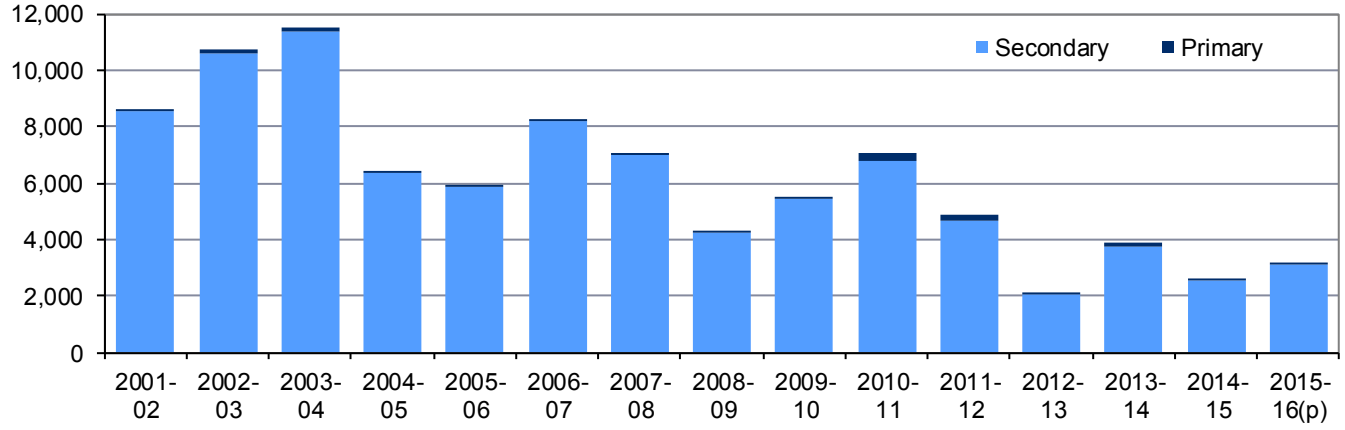
(r) Revised data.
(p) Provisional data.

In 2015-16, 3 per cent of all primary fires took place on grassland, woodland or crops. The proportions for secondary fires and false alarms were higher at 44 per cent and 8 per cent respectively.

In this same year, the majority (96 per cent) of the false alarms attended by the FRAs on grassland, woodland and crops were due to calls made with good intent; only 4 per cent were due to malicious calls. In 2015-16 FRAs in Wales attended 8 per cent more false alarms on grassland, woodland and crops than in the previous year. Numbers of grassland, woodland and crop related false alarms are not available prior to 2009-10.

Chart 3 shows the vast majority of grassland, woodland and crop fires attended are secondary fires (between 95 and 99 per cent each year since 2001-02), and further shows the fluctuations in numbers. Numbers of these fires are likely to be influenced by weather conditions; for instance, 2012-13, which saw the lowest number of grassland, woodland and crop fires in the time series, was one of the wettest financial years since records began. Conversely 2003-04, the peak in the chart below, was a relatively dry year, seeing 11 per cent less rain than the average over 2001-02 to 2015-16. The relationship between these fires and the weather is looked at further in charts 7 and 8.

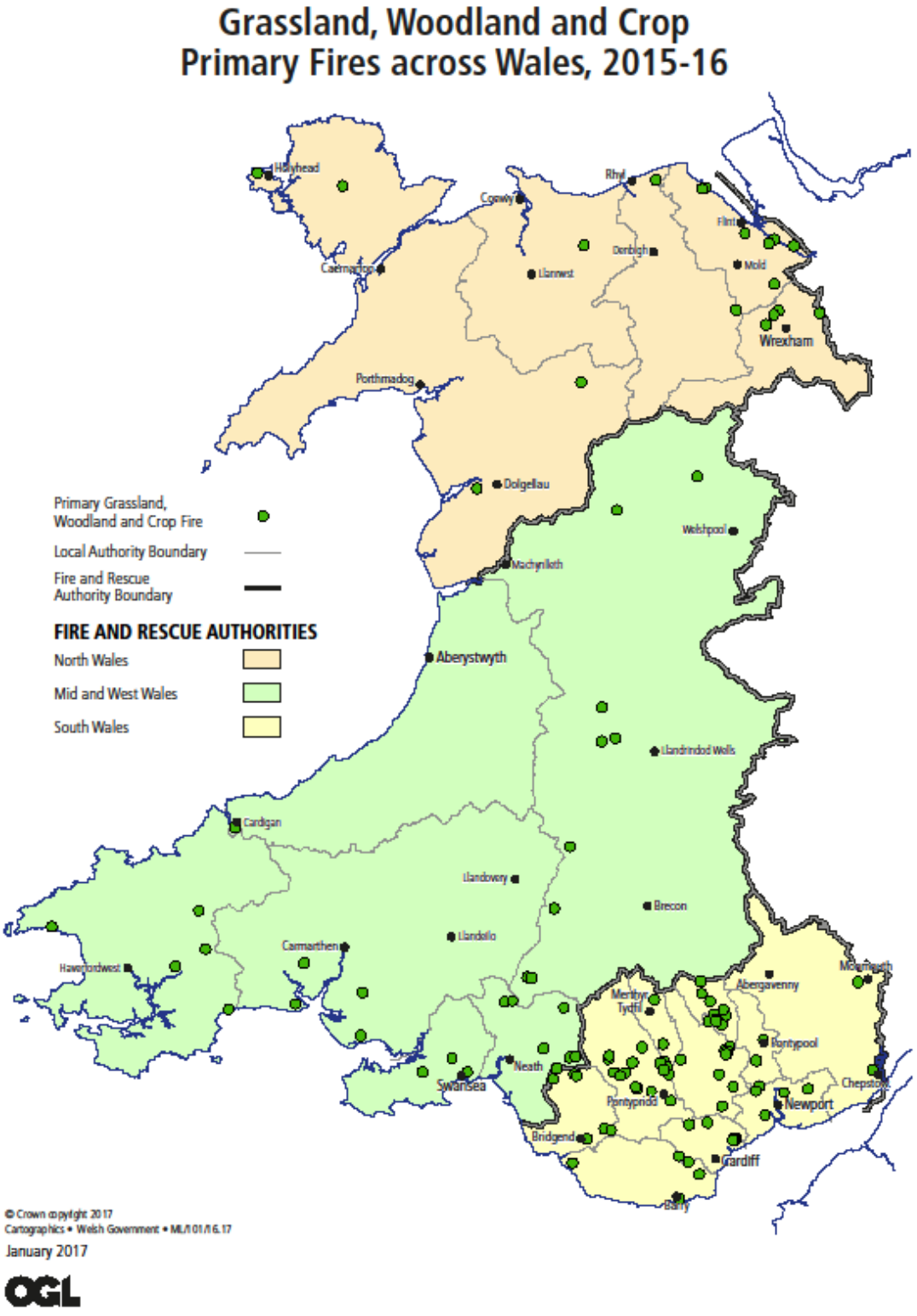
Chart 3 Number of grassland, woodland and crop fires, by type



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

Primary grassland, woodland and crop fires

Primary fires are the most serious reportable 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. In 2015-16, 118 primary grassland, woodland and crop fires were attended in Wales, and their locations are shown on the map below.



Data mapped above are based on grid references; see the Key Quality Information for further details.

Only 3 per cent of all primary fires occurred on grassland, woodland or crops, with a similar proportion seen in previous years (between 5 and 1 per cent).

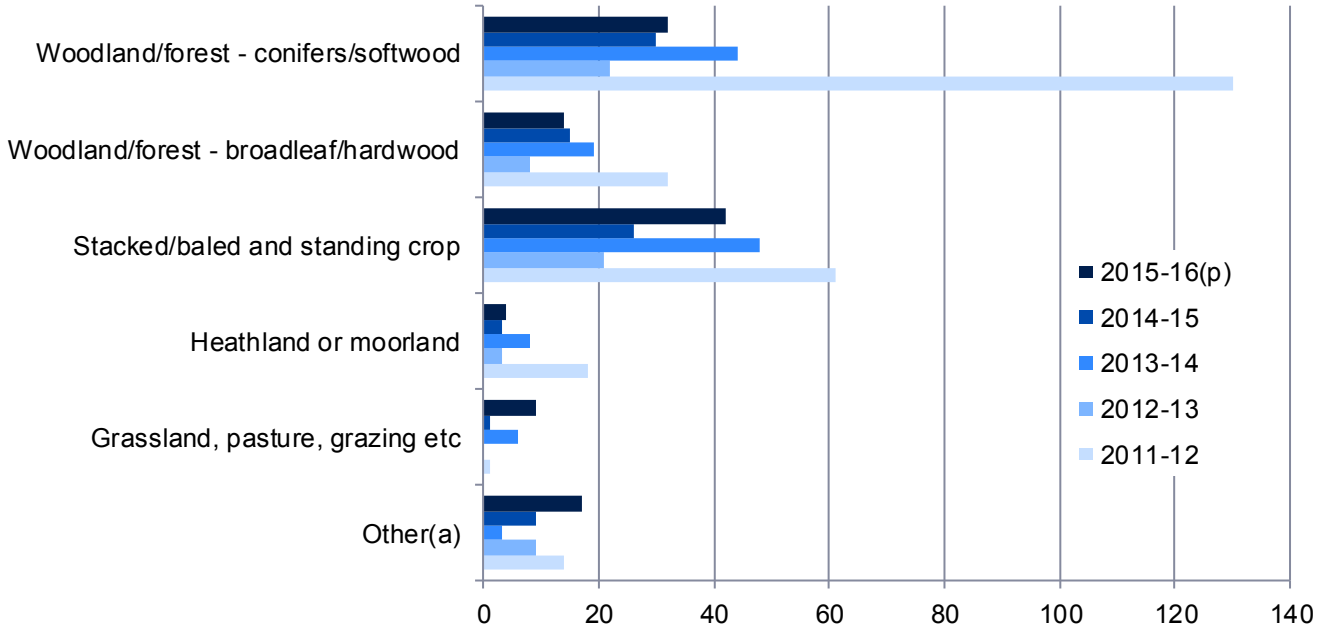
Many grassland locations saw an increase in the number of primary fires in 2015-16, the exceptions tending to be the smaller categories such as domestic gardens, tree scrub, standing crops and broadleaf/hardwood forest. Around two fifths of primary grassland fires in 2015-16 occurred in woodland and a further third on stacked or baled crops. Numbers primary fires on grassland in 2015-16 rose by 40 per cent compared with the previous year; however the number was still fewer than in 2013-14.

Table 2 Number of primary grassland, woodland and crop fires by location

	2011-12	2012-13	2013-14	2014-15	2015-16(p)
Domestic garden (vegetation not equipment)	5	3	0	3	2
Grassland, pasture, grazing etc	1	0	6	1	9
Heathland or moorland	18	3	8	3	4
Stacked/baled crop	26	18	38	21	38
Standing crop	35	3	10	5	4
Tree scrub	3	1	1	3	0
Woodland/forest - broadleaf/hardwood	32	8	19	15	14
Woodland/forest - conifers/softwood	130	22	44	30	32
Other (a)	6	5	2	3	15
All primary grassland, woodland and crop fires	**256**	**63**	**128**	**84**	**118**

(a) Hedges, nurseries, market gardens, road side vegetation and scrub land.
(p) Provisional data.

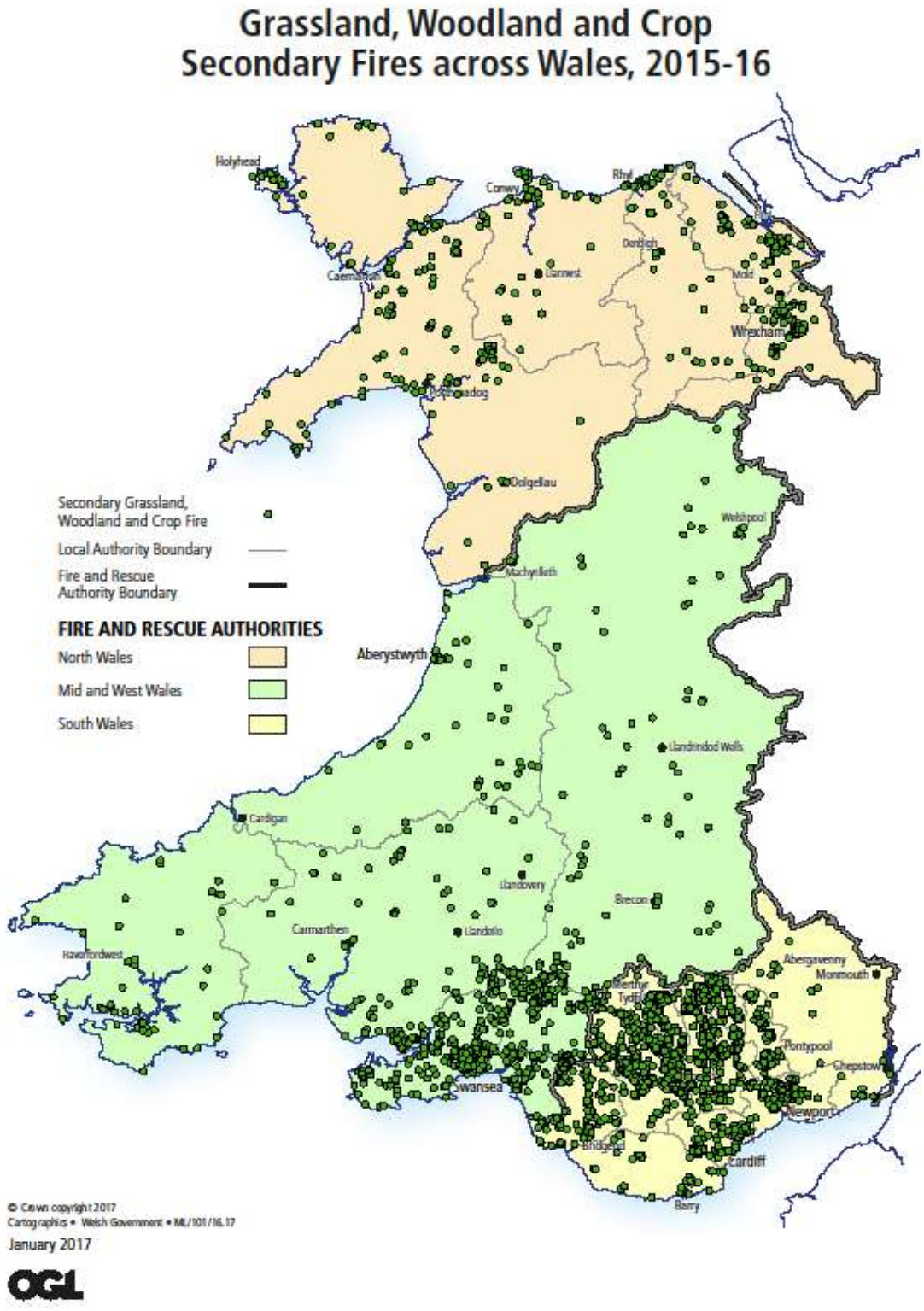
Chart 4 Number of primary grassland, woodland and crop fires, by location



(a) 'Other' shown in the above chart includes domestic gardens, hedge (from 2011-12), nurseries and market gardens, roadside vegetation, scrub land and tree scrub.
(p) Provisional data.

Secondary grassland, woodland and crop fires

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. In 2015-16 there were 3,098 secondary grassland, woodland and crop fires in Wales, the map below shows their locations.



Data mapped above are based on grid references; see the Key Quality Information for further details.

Of all secondary fires that were reported in Wales, grassland, woodland and crop fires accounted for 44 per cent in 2015-16, an increase of 5 percentage points from the previous year.

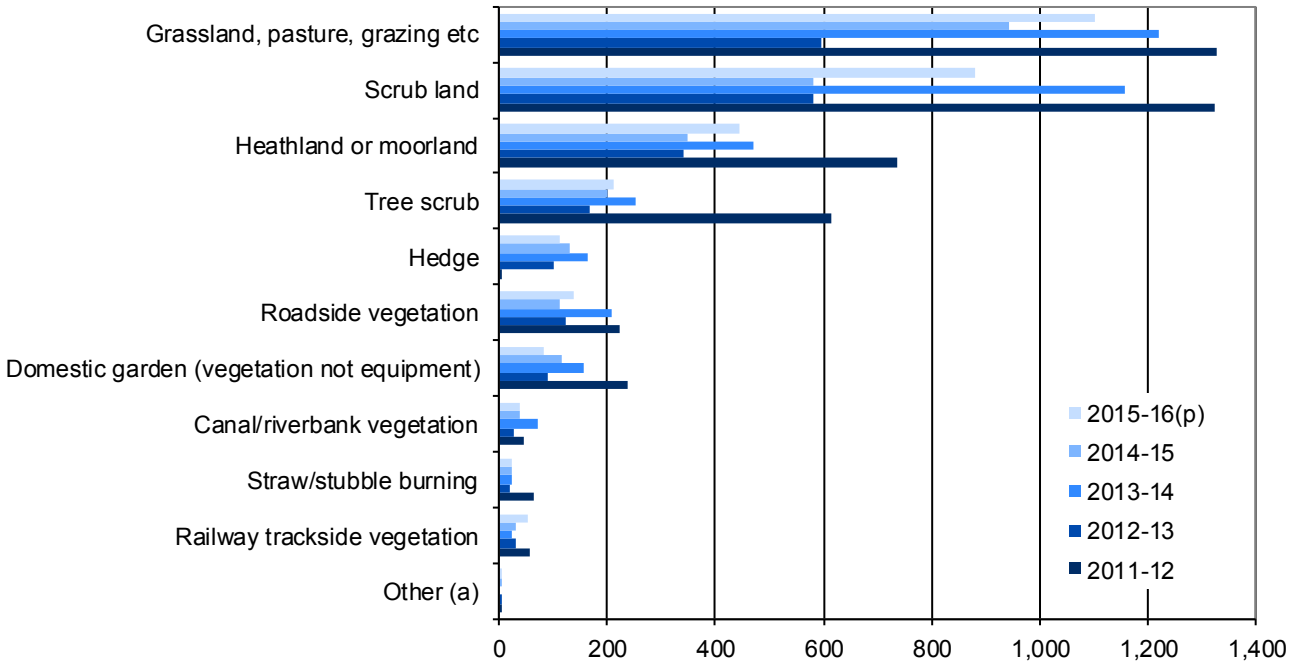
Most locations in the table below saw a rise in the number of these fires; the only decreases occurred in domestic gardens and hedges. In 2015-16, 64 per cent of secondary grassland, woodland and crop fires occurred on either 'grassland, pasture, grazing etc.' or scrub land; these are consistently the two largest categories across the time series, accounting for between 56 and 64 per cent since 2009-10. Overall, in 2015-16, secondary fires on grassland rose by 22 per cent compared with the previous year; however, as with primary fires, the number was still fewer than in 2013-14.

Table 3 Number of secondary grassland, woodland and crop fires by location

	2011-12	2012-13	2013-14	2014-15	2015-16(p)
Canal/riverbank vegetation	47	29	70	40	40
Domestic garden (vegetation not equipment)	238	89	157	114	83
Grassland, pasture, grazing etc	1,329	595	1,220	942	1,103
Heathland or moorland	736	343	470	349	446
Hedge	3	100	165	132	112
Railway trackside vegetation	57	32	22	32	53
Roadside vegetation	224	125	210	113	138
Scrub land	1,322	580	1,158	581	880
Straw/stubble burning	65	20	23	22	25
Tree scrub	616	167	253	202	213
Other (a)	5	2	0	2	5
All secondary grassland, woodland and crop fires	**4,642**	**2,082**	**3,748**	**2,529**	**3,098**

(a) Nurseries, market gardens, stacked/baled crop, woodland/forest - broadleaf/hardwood and woodland/forest - conifers/softwood.
(p) Provisional data.

Chart 5 Number of secondary grassland, woodland and crop fires, by location



(a) 'Other' as shown in the above chart includes 'woodland/forest - broadleaf/hardwood' and 'woodland/forest - conifers/softwood', 'nurseries and market garden', 'stacked and baled crop''.
(p) Provisional data.

Grassland, woodland and crop fires by motive

In 2015-16 the number of deliberate grassland, woodland and crop fires in Wales also rose by almost a third, however the number of corresponding accidental fires fell by 5 per cent.

More than 7 in 10 primary grassland, woodland and crop fires were deliberate in 2015-16, the highest proportion since 2011-12. Both deliberate and accidental primary grassland fires saw increases in 2015-16 of 47 and 27 per cent respectively.

Since the introduction of the Incident Recording System (IRS) in April 2009 for collecting FRA incident data, greater detail relating to secondary fires has become available. There were 2,519 deliberate secondary grassland, woodland and crop fires in 2015-16, over 600 more than in the previous year (a 32 per cent increase) but lower than the number in 2013-14. The number of accidental secondary fires however fell by 6 per cent. Over four fifths of secondary grassland, woodland and crop fires were deliberate.

Of the 612 accidental grassland, woodland and crop fires in 2015-16, 28 per cent occurred on grassland, pasture, grazing etc. and 23 per cent on heathland and moorland. Of the 2,604 deliberate grassland, woodland and crop fires in 2015-16, 36 per cent occurred on grassland, pasture, grazing etc. and 31 per cent on scrub land.

Table 4 Number and percentage of grassland, woodland and crop fires by motive

	Number			Percentage		
	Deliberate	Accidental	All	Deliberate	Accidental	All
Primary fires						
2011-12	205	51	256	80	20	100
2012-13	39	24	63	62	38	100
2013-14	86	42	128	67	33	100
2014-15	58	26	84	69	31	100
2015-16 (p)	85	33	118	72	28	100
Secondary fires						
2011-12	3,814	828	4,642	82	18	100
2012-13	1,731	351	2,082	83	17	100
2013-14	2,912	836	3,748	78	22	100
2014-15	1,910	619	2,529	76	24	100
2015-16 (p)	2,519	579	3,098	81	19	100
All fires						
2011-12	4,019	879	4,898	82	18	100
2012-13	1,770	375	2,145	83	17	100
2013-14	2,998	878	3,876	77	23	100
2014-15	1,968	645	2,613	75	25	100
2015-16 (p)	2,604	612	3,216	81	19	100

(p) Provisional data.

Grassland, woodland and crop fires by month

The majority of grassland, woodland and crop fires take place in the spring and summer months. April 2015 and March 2016 recorded the highest proportions (46 per cent and 16 per cent respectively) of grassland fires for the financial year 2015-16.

The occurrence of outdoor fires is likely to be influenced by the weather. Data from the Met Office shows that 2015-16 April was the driest month of the year in terms of rainfall and the second sunniest. Weather data cannot explain all the fluctuations however, for example June had a little more sunshine than April and was the second driest in terms of rainfall, but had far fewer (around a fifth) fires than April.

The months November to January saw the fewest fires (only 1 per cent of all grassland, woodland an crop fires in 2015-16), the most rainfall and the least sunshine. Other weather conditions such as snow and ice may also affect the number of fires in the winter.

Met Office data are available.

Table 5 Number and percentage of grassland, woodland and crop fires, by month

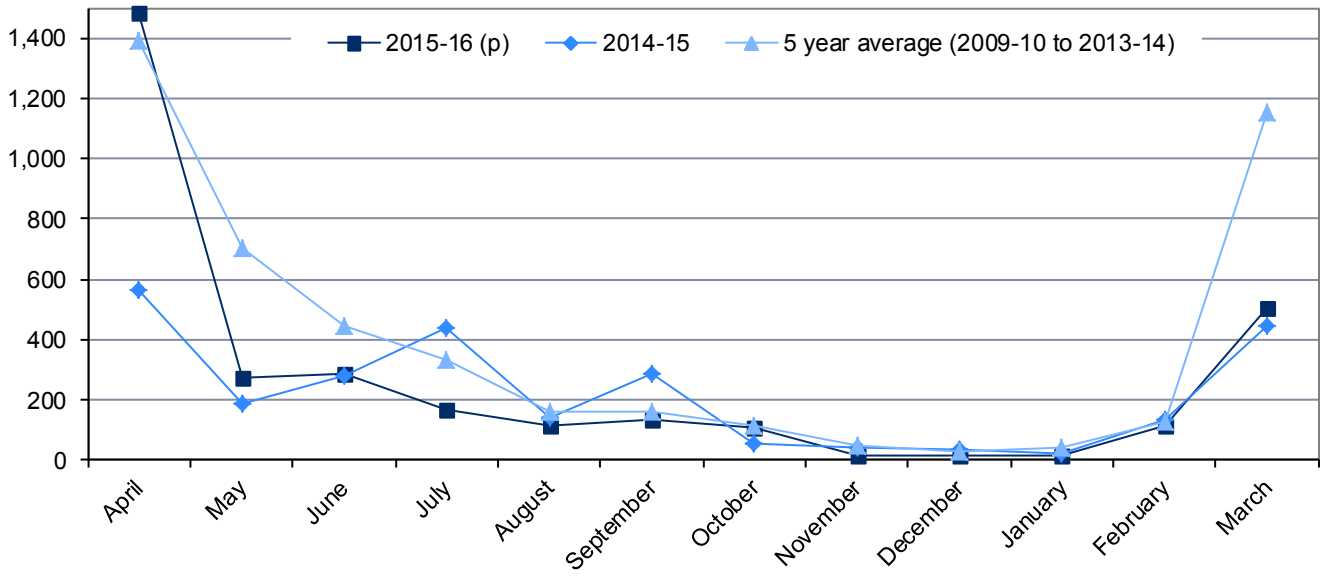
	Number					Percentage				
	2011-12	2012-13	2013-14	2014-15	2015-16(p)	2011-12	2012-13	2013-14	2014-15	2015-16
April	1,617	496	1,196	561	1,487	33.0	23.1	30.9	21.5	46.2
May	830	376	592	185	275	16.9	17.5	15.3	7.1	8.6
June	251	74	433	278	284	5.1	3.4	11.2	10.6	8.8
July	332	114	732	437	163	6.8	5.3	18.9	16.7	5.1
August	219	53	176	139	116	4.5	2.5	4.5	5.3	3.6
September	116	77	107	286	130	2.4	3.6	2.8	10.9	4.0
October	142	36	40	56	105	2.9	1.7	1.0	2.1	3.3
November	53	51	57	43	13	1.1	2.4	1.5	1.6	0.4
December	22	16	33	30	12	0.4	0.7	0.9	1.1	0.4
January	46	12	13	22	13	0.9	0.6	0.3	0.8	0.4
February	96	216	18	134	112	2.0	10.1	0.5	5.1	3.5
March	1,174	624	479	442	506	24.0	29.1	12.4	16.9	15.7
Total fires	**4,898**	**2,145**	**3,876**	**2,613**	**3,216**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(p) Provisional data.

Half of the months in 2015-16 saw increases and half saw decreases compared with the previous year. The largest increases in numbers of grassland, woodland and crop fires were seen April and October (165 per cent compared with April 2014 and 88 per cent compared with October 2014 respectively); the largest decreases were in November (down 70 per cent compared with November 2014), July (down 63 per cent compared with July 2014) and December (down 60 per cent compared with December 2014).

Chart 6 shows a comparison between the 2015-16 and 2014-15 data, along with the 5 year average for 2009-10 to 2013-14 and highlights the drop in the number of fires in March in recent years. The chart also indicates how volatile the numbers are in the months April to July since the pattern varies from year to year.

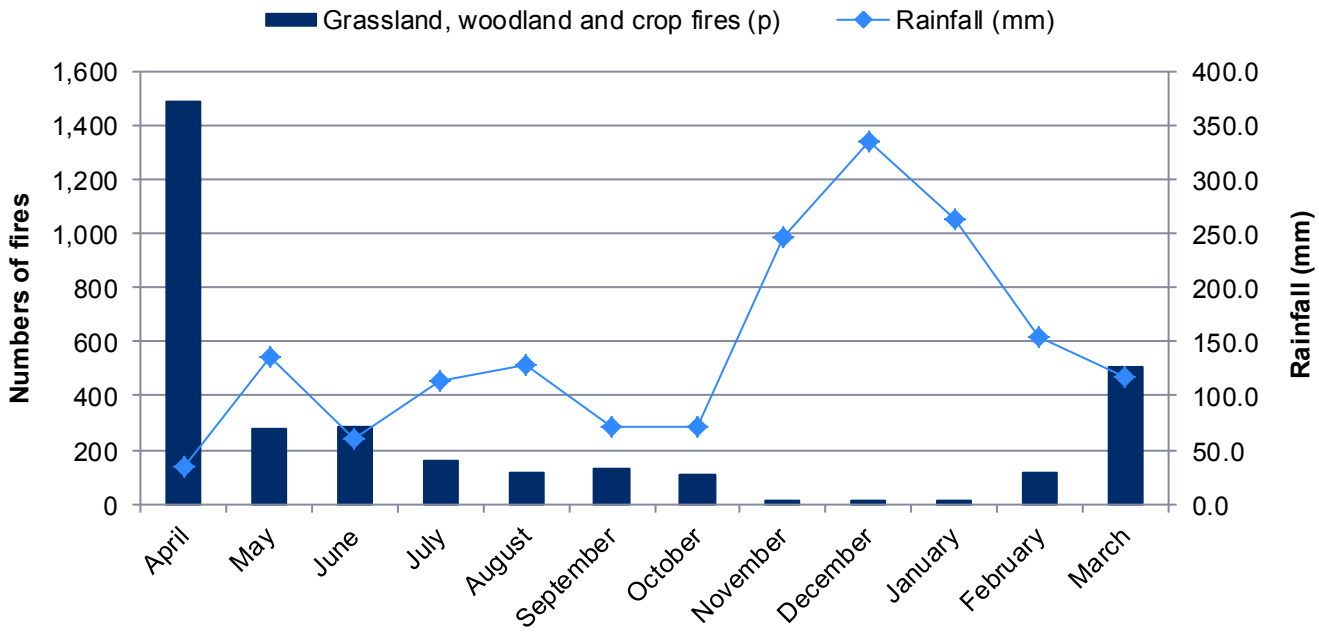
Chart 6 Number of grassland, woodland and crop fires, by month



(p) Provisional data.

Chart 7 shows the relationship between the number of grassland, woodland and crop fires and the levels of rainfall each month in 2015-16. Broadly speaking, when the levels of rainfall are high the number of fires seen in that month are low. For instance the months November to January had the highest levels of rainfall in the year; this period corresponds to the lowest monthly numbers of fires in the year. Similar patterns can be seen in earlier years.

Chart 7 Number of grassland, woodland and crop fires and rainfall levels by month, 2015-16

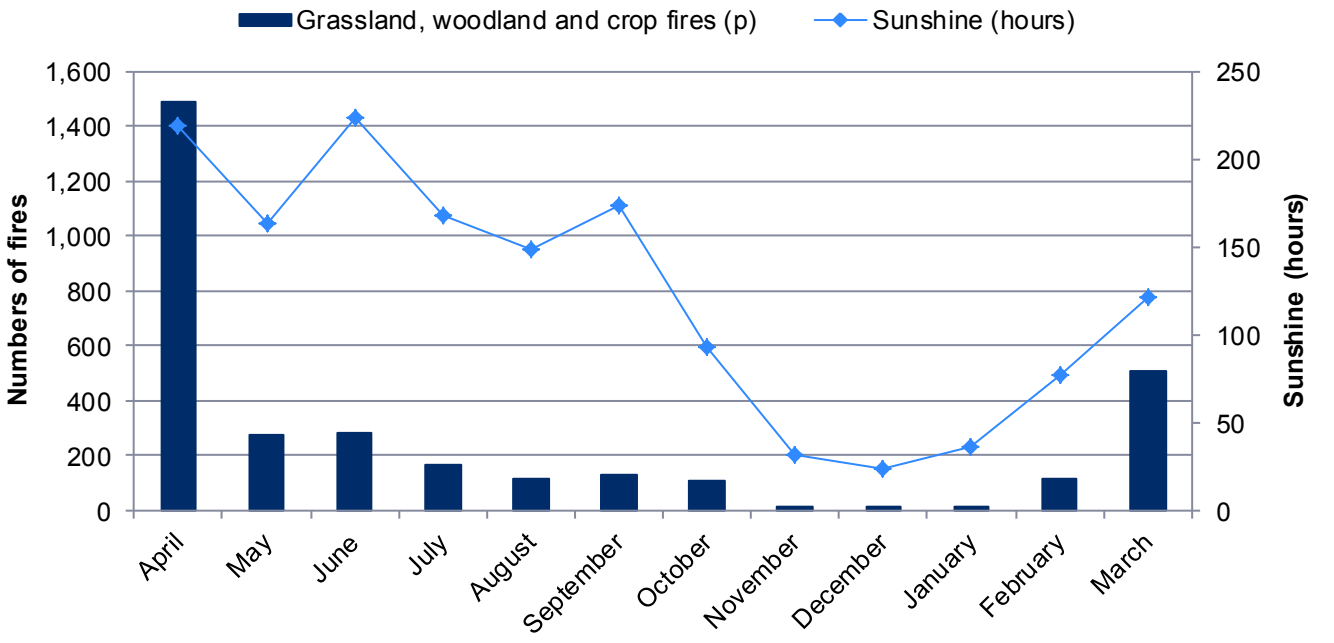


Source: Incident Recording System, Met Office

(p) Provisional data

As may be expected there is also a pattern in the numbers of grassland, woodland and crop fires and hours of sunshine, as can be seen in the chart below; generally the numbers of fires were higher when there were more hours of sunshine.

Chart 8 Numbers of grassland, woodland and crop fires and hours of sunshine by month, 2015-16



Source: Incident Recording System, Met Office

(p) Provisional data

Fires and false alarms by Fire and Rescue Authority

Throughout the time series shown in table 6, South Wales FRA attended more than half of the grassland, woodland and crop fires occurring in Wales each year. Of the 3,216 grassland fires in 2015-16, 57 per cent were in South Wales, 29 per cent were in Mid and West Wales and 14 per cent were in North Wales.

The number of grassland, woodland and crop fires rose in all three FRAs in 2015-16; in South Wales the number increased by 36 per cent, whilst in Mid and West Wales and North Wales the increases were 10 per cent and 9 per cent respectively. Since 2001-02 the number of grassland, woodland and crop fires has fallen by 65 per cent in South Wales, 60 per cent in Mid and West Wales and 57 per cent in North Wales.

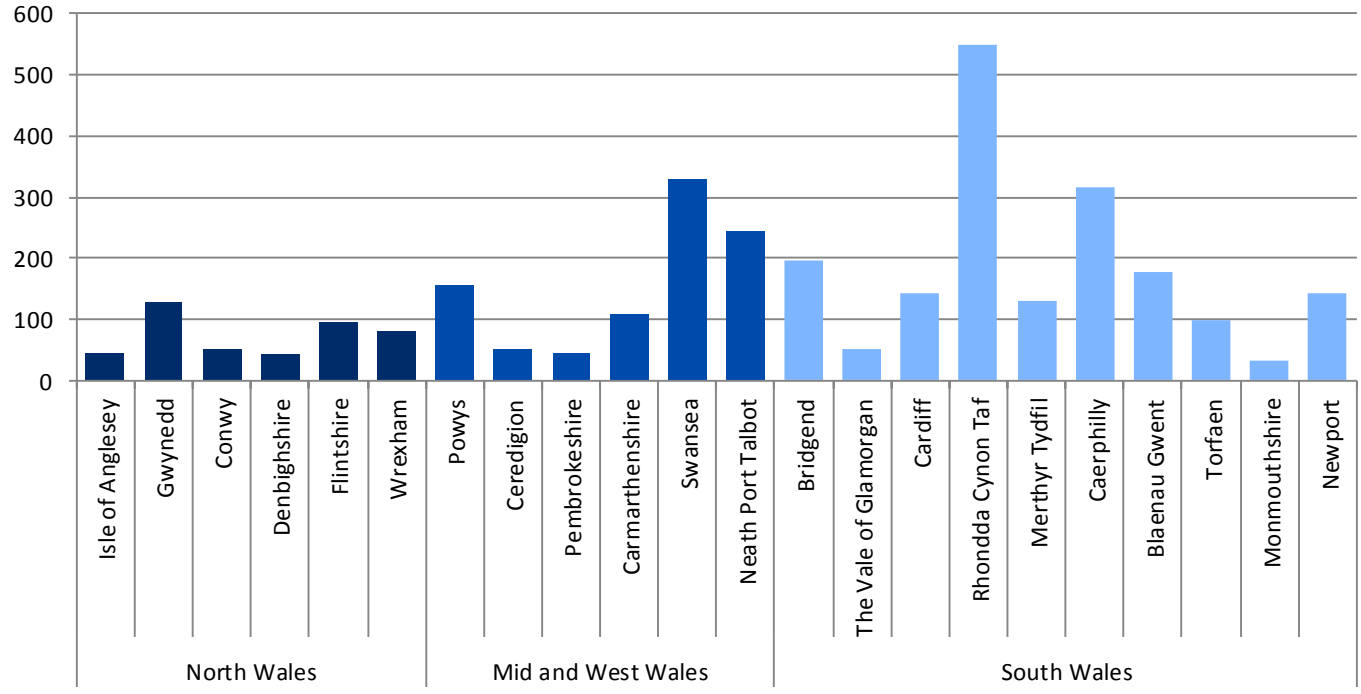
Table 6 Number and percentage of grassland, woodland and crop fires, by Fire and Rescue Authority

	Number			Percentage		
	North Wales	Mid and West Wales	South Wales	North Wales	Mid and West Wales	South Wales
2001-02	1,048	2,337	5,259	12	27	61
2002-03	1,360	2,938	6,442	13	27	60
2003-04	1,741	2,912	6,842	15	25	60
2004-05	958	1,908	3,572	15	30	55
2005-06	856	1,739	3,277	15	30	56
2006-07	1,275	2,410	4,595	15	29	55
2007-08	825	2,185	4,054	12	31	57
2008-09	505	1,285	2,515	12	30	58
2009-10	675	1,471	3,370	12	27	61
2010-11	829	1,934	4,332	12	27	61
2011-12	837	1,441	2,620	17	29	53
2012-13	282	724	1,139	13	34	53
2013-14	480	1,224	2,172	12	32	56
2014-15	411	850	1,352	16	33	52
2015-16(p)	446	936	1,834	14	29	57

(p) Provisional data.

Rhondda Cynon Taff and Swansea local authorities had the highest proportion of grassland, woodland and crop fires in Wales in 2015-16 with 17 per cent and 10 per cent respectively; Monmouthshire had the smallest proportion with 1 per cent. Similar proportions were seen in earlier years.

Chart 9 Number of grassland, woodland and crop fires by Fire and Rescue Authority and Local Authority 2015-16(p)(a)



(a) Local authorities have been assigned to incidents based on grid references; see the Key Quality Information for further details.
(p) Provisional

Data on false alarms on grassland woodland and crops has only become available with the introduction of IRS in April 2009.

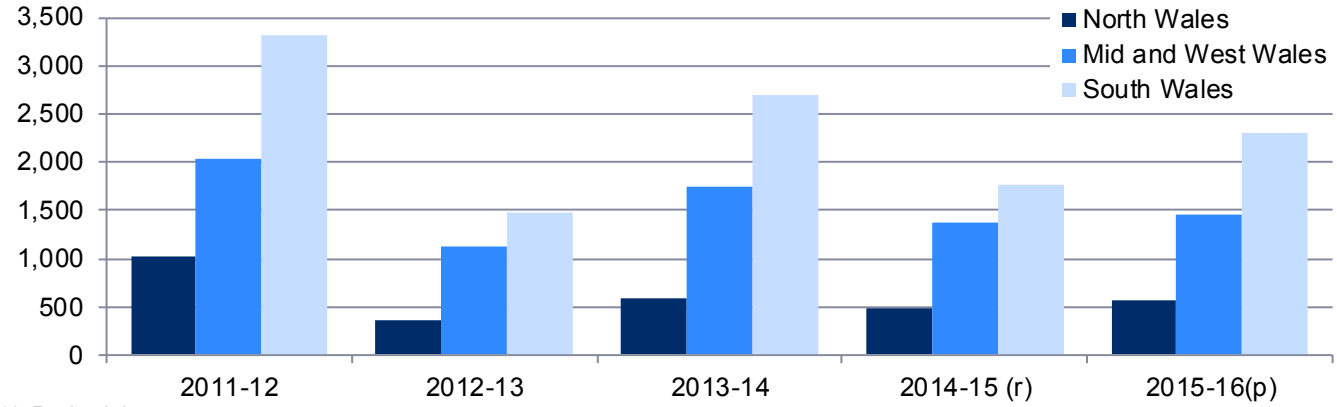
In 2015-16 the pattern of grassland, woodland and crops false alarms across the three FRAs is different to that for fires. 47 per cent of false alarms attended were in Mid and West Wales (522 of the 1,114 false alarms); 480 (43 per cent) occurred in South Wales and 112 (10 per cent) were in North Wales. Only 4 per cent of these false alarms in 2015-16 were due to malicious calls, with the remaining 96 per cent due to good intent. South Wales had the highest number of malicious calls relating to grassland, woodland and crop false alarms, which in turn equated to 6 per cent of the grassland, woodland and crop false alarms attended in the region.

Table 7 Number of grassland, woodland and crop fires and false alarms fires by type and Fire and Rescue Authority

	2011-12	2012-13	2013-14	2014-15 (r)	2015-16(p)
North Wales					
Primary fires	36	18	20	18	20
Secondary fires	801	264	460	393	426
False Alarms	183	81	105	81	112
All incidents	1,020	363	585	492	558
Mid and West Wales					
Primary fires	59	11	25	15	28
Secondary fires	1,382	713	1,199	835	908
False Alarms	599	394	528	531	522
All incidents	2,040	1,118	1,752	1,381	1,458
South Wales					
Primary fires	161	34	83	51	70
Secondary fires	2,459	1,105	2,089	1,301	1,764
False Alarms	701	348	523	416	480
All incidents	3,321	1,487	2,695	1,768	2,314
Wales					
Primary fires	256	63	128	84	118
Secondary fires	4,642	2,082	3,748	2,529	3,098
False Alarms	1,483	823	1,156	1,028	1,114
All incidents	6,381	2,968	5,032	3,641	4,330

(r) Revised data
(p) Provisional data

Chart 10 Number of fires and false alarms on grassland, woodland and crops by Fire and Rescue Authority



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

Section 2: Casualties from grassland, woodland and crop fires

In each of the last four years there have been fewer than 10 casualties resulting from grassland, woodland and crop fires.

There has been one fatal casualty in grassland, woodland and crop fires since 2001-02, occurring in 2007-08. Since 2001-02 there have been 88 non-fatal casualties in these fires; almost half of the injuries incurred were burns and 30 per cent were sent for precautionary checks. Data on rescues from fires has only become available with the introduction of IRS in April 2009. Since 2009-10 there have been 2 rescues of an uninjured person from a grassland, woodland or crop fire, 1 in 2010-11 and 1 in 2015-16.

There were 6 non-fatal casualties in 2015-16, the same number as in 2014-15 and equating to 1 per cent of all non-fatal fire casualties in Wales in 2015-16. Of these 6 casualties, 2 had burns, 1 was overcome by gas and 3 were sent for precautionary checks or given first aid.

4 of the 6 casualties in 2015-16 were the result of accidental fires, whilst 2 casualties occurred in deliberate fires. Fires started deliberately have accounted for a third of non-fatal casualties from grassland, woodland and crop fires since 2009-10.

4 of the casualties occurred in fires attended by Mid and West Wales FRA whilst 2 occurred in South Wales. There were no casualties from grassland, woodland and crop fires in North Wales in 2015-16.

Table 8 Number of casualties and rescues from grassland, woodland and crop fires

	Fatalities	Non-fatal casualties	Rescues (no injury) (a)
2001-02	0	1	..
2002-03	0	10	..
2003-04	0	9	..
2004-05	0	10	..
2005-06	0	5	..
2006-07	0	1	..
2007-08	1	0	..
2008-09	0	6	..
2009-10	0	8	0
2010-11	0	10	1
2011-12	0	10	0
2012-13	0	5	0
2013-14	0	1	0
2014-15	0	6	0
2015-16 (p)	0	6	1

(a) Data not collected prior to 2009-10.
(p) Provisional data.
.. Data not available.

Section 3: Area of damage caused by grassland, woodland and crop fires

Fires are classified according to the size of area damaged in the course of a fire. In 2015-16, 45 per cent of primary grassland, woodland and crop fires in Wales damaged 20 square metres or less. A further 40 per cent were over 200 square metres, more than double the number in 2014-15.

Around half of secondary fires saw damage of 20 square metres or less. However the largest increase in proportion was seen in the fires over 200 square metres, which rose from 15 per cent to 23 per cent and the numbers themselves by 88 per cent.

Table 9 Number and percentage of grassland woodland and crop fires by area damaged

	Number					Percentage				
	2011-12	2012-13	2013-14	2014-15(r)	2015-16(p)	2011-12	2012-13	2013-14	2014-15	2015-16
Primary fires										
0-20 sq m	137	37	58	51	53	53.5	58.7	45.3	60.7	44.9
21-200 sq m	38	10	31	12	18	14.8	15.9	24.2	14.3	15.3
201+ sq m	81	16	39	21	47	31.6	25.4	30.5	25.0	39.8
Total (a)	**256**	**63**	**128**	**84**	**118**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Secondary fires										
0-20 sq m	2,487	1,169	2,092	1,518	1,557	53.6	56.1	55.8	60.0	50.3
21-200 sq m	1,294	564	1,076	635	835	27.9	27.1	28.7	25.1	27.0
201+ sq m	852	349	580	376	706	18.4	16.8	15.5	14.9	22.8
Total (a)	**4,642**	**2,082**	**3,748**	**2,529**	**3,098**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
All fires										
0-20 sq m	2,624	1,206	2,150	1,569	1,610	53.6	56.2	55.5	60.0	50.1
21-200 sq m	1,332	574	1,107	647	853	27.2	26.8	28.6	24.8	26.5
201+ sq m	933	365	619	397	753	19.0	17.0	16.0	15.2	23.4
Total (a)	**4,898**	**2,145**	**3,876**	**2,613**	**3,216**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) Includes a small number of fires in 2010-11 and 2011-12 of unknown area.
(r) Revised data.
(p) Provisional data

In 2015-16 3 per cent of grassland, woodland and crop fires took place on National Park land; of these 98 per cent were secondary fires. Since 2009-10 there have been 750 grassland, woodland and crop fires on National park land, equating to 3 per cent of all grassland, woodland and crop fires. 95 per cent of these fires (since 2009-10) were secondary fires.

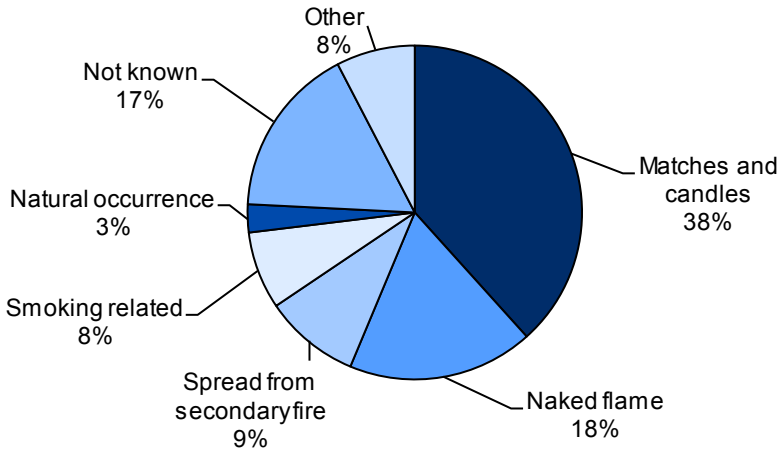
In 25 per cent of primary fires in 2015-16, strong winds were a rapid growth factor. Comparative data for secondary fires is not available.

Section 4: Source of ignition and cause of grassland, woodland and crop fires

Information is available on the source of primary fires, but not secondary fires. Chart 11 looks at the source of the flame, spark or heat that first ignited the fire. This differs from the cause of the fire, which refers to why the fire started, for instance deliberate (not shown in chart 12), careless handling, overheating or natural causes (which are accidental).

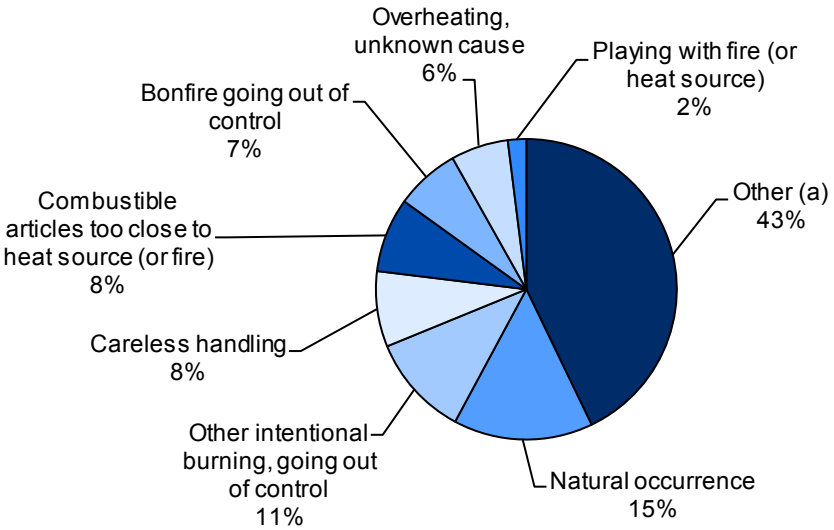
In 38 per cent of the primary grassland fires between 2001-02 and 2015-16 the source of ignition were matches or candles. The next largest category was 'naked flame' with 18 per cent.

Chart 11 Percentage of primary grassland, woodland and crop fires, 2001-02 to 2015-16 by source of ignition



The causes of accidental primary grassland, woodland and crop fires are varied. In Chart 12, 43 per cent of these fires are shown as having 'other' causes. They include negligent use of equipment, fault in equipment or appliance, faulty fuel supply and person too close to heat source (or fire) as well as unspecified causes (a quarter of these fires have not got a specified cause). 15 per cent of accidental primary grassland, woodland and crop fires were determined to have been caused naturally.

Chart 12 Percentage of accidental primary grassland, woodland and crop fires, 2001-02 to 2015-16 by main cause



(a) Other in the above chart includes 'Not applicable', 'Fault in equipment or appliance', 'Faulty fuel supply', 'Person too close to heat source (or fire)', 'Negligent use of equipment or appliance (heat source)', and 'Accumulation of flammable material'

Glossary

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

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

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.

Dangerous substances can spread fire, intensify fire, intensify smoke, render water unsuitable or produce toxic gases.

Deliberate fires include those where deliberate ignition is merely suspected.

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. False alarms are categorised as follows:

Malicious False Alarms are calls made with the intention of getting the fire and rescue service to attend a non-existent fire-related event, including deliberate and suspected malicious intentions.

Good Intent False Alarms are calls made in good faith in the belief that the fire and rescue service really would attend a fire.

False Alarms Due to Apparatus are calls initiated by fire alarm and fire-fighting equipment operating (including accidental initiation of alarm apparatus by persons).

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 (FRAs) are the statutory bodies which oversee the policy and service delivery of a fire and rescue service. The three authorities in Wales are North Wales, Mid and West Wales and South Wales.

Grassland fires, from 2009-10, include fires in gardens, crops, woods, nurseries/market gardens, heathland/moorland, grassland/pasture/grazing etc., scrub land, railway trackside vegetation, roadside vegetation and roadside vegetation. Prior to this date grassland fires referred to primary fires in allotments, gardens, crops, woods and other agricultural locations and secondary fires on grassland, heathland and as a result of intentional straw and stubble burning. This is a broader definition than the land use definition in agricultural publications.

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.

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 reportable 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 authority 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.

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

Key quality information

On 10 November 2004 the Fire and Rescue Services Act 2004, which devolved fire and rescue services to the National Assembly for Wales (now the responsibility of the Welsh Government), 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 over 690,000 across a geographical area of 2,400 square miles. It employs over 800 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 almost 900,000. 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 1,700 staff including nearly 1,400 fire-fighters who operate from 47 fire stations throughout South Wales.

Prevention

Following the exceptional forest fires in Easter 2003 caused by weather conditions, Forest Research used geospatial mapping and qualitative techniques (interviews, observation, and surveys) to characterise and understand the problem of wildfires, focusing on the social factors behind the issue. Their information paper includes details of measures put in place to avoid similar occurrences.

The Welsh Government has issued guidance on heather and grass burning. Currently, burning is only allowed during the following periods:

- 1 October - 31 March in Uplands
- 1 November - 15 March elsewhere

A license is required at all other times and can only be obtained in very specific circumstances. Application for burning during restricted periods can be made through the Welsh Government Website at the above link. It is also illegal to burn between sunset and sunrise. In addition a Burning Management Plan has to be completed for all proposed burnings.

Burning in Wales is controlled by The Heather and Grass etc. (Burning) Regulations 2008 and The Heather and Grass Burning Code, which gives advice on burning best practice.

Relevance

The Welsh Government uses the information in this bulletin to monitor the trends in grassland fires occurring in Wales. 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 the provision of 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' on page 23.

The incident data are extracted from IRS annually (around May/June) 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. 2015-16 data are currently marked as provisional and may be revised in future publications.

The table below compares the provisional 2014-15 data extracted from IRS in June 2015 (first published in July 2015 In Fire Statistics 2014-15 (and the subsequent Grassland fires bulletin of November 2015) with the revised data (extracted in June 2016) which appeared in Fire Statistics Wales 2015-16 and is contained in this bulletin. No revision was necessary to the total number of primary fires or secondary fires data, as seen below.

Comparison of provisional data with revised data (2014-15)

	Provisional 2014-15 Published in July 2015	Revised 2014-15 Published in July 2016	Percentage change
Primary grassland, woodland and crop fires	84	84	0.0
Secondary grassland, woodland and crop fires	2,529	2,529	0.0

Percentage changes for revised data

	2010-11	2011-12	2012-13	2013-14	2014-15
Primary grassland, woodland and crop fires	1.8	0.4	3.3	0.0	0.0
Secondary grassland, woodland and crop fires	-1.8	0.1	0.0	0.0	0.0

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 Deliberate fires bulletin if published) which is extracted in May each year. This bulletin is usually published in the February around 11 months after the year end, but may be brought forward if resources allow.

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. Simultaneously the release is also published on the National Statistics Publication Hub. 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. You can see a copy of the report on the Welsh Government website.

Easter holidays

Numbers of fires in March and April may be affected by Easter holidays (bank holidays and school holidays). As the timing of Easter can change this impacts on the financial year in which the school holidays may fall.

Main school Easter holidays for the last few years are listed below:

- 2016 - Friday 25th March to Friday 8th April. The first week of the school holidays falls in the scope of this bulletin. Good Friday 25th March, Easter Monday 28th March
- 2015 - Monday 30th March to Friday 10th April. Only the 30th and 31st March fall in the financial year 2014-15, the remainder of the holiday falls within 2015-16. Good Friday 3rd April, Easter Monday 6th April.
- In academic years prior to 2014/15 Easter holidays may have varied slightly between local authorities but would have occurred around the time of Good Friday and Easter Monday

- 2014 - Good Friday 18th April, Easter Monday 21st April. School holidays would have fallen wholly in financial year 2014-15.
- 2013 – Good Friday 29th March, Easter Monday 1st April. School holidays would have partially fallen in financial year 2012-13 and partially in 2013-14.

UK comparisons

Whilst England and Scotland do not publish specific grassland fires bulletins, data by location 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)

2015-16 data

Pre 2014-15 data (published by the Scottish Government)

Limited Northern Ireland data (published by Northern Ireland Fire and Rescue Service).

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 Official 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 Official 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.

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 the National Assembly. The 46 national indicators were laid in March.

Information on indicators and associated technical information - How do you measure a nation's progress? - National Indicators

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

The document is available at: http://gov.wales/statistics-and-research/fire-statistics/?lang=en

Fire Statistics Data Quality Report

Incident Recording System Questions and Lists

More information is available in the form of StatsWales tables that accompany this release.

Analysis of annual Welsh fire incident data can be found in the bulletin 'Fires Statistics, 2015-16':

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

The following link shows an Evaluation of the Arson Prevention Programme which focuses on three of the main initiatives; Arson Reduction Teams (ARTs); the Arson Small Grants Programme; and the Grassland Fire Initiative.

Operation Phoenix: a partnership initiative aimed at reducing the number of grass fires in the Rhondda Valleys over Easter involving South Wales Fire and Rescue Service, South Wales Police, the Forestry Commission and Rhondda Cynon Taf County Borough Council.

Next update

Grassland fires 2016-17 to be published in February 2018.

We want your feedback

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

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