



## Grassland fires, 2020-21

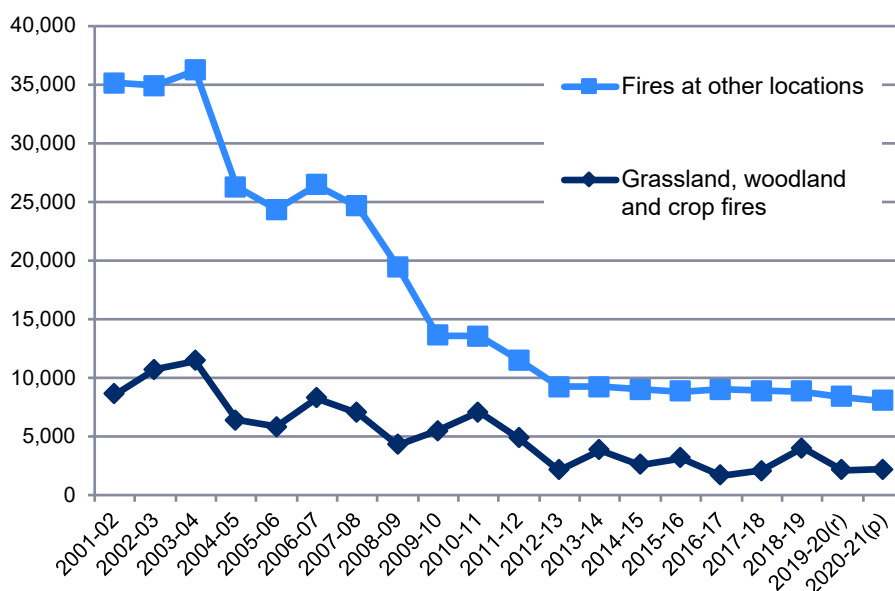
28 October 2021  
SB 35/2021

Around one in five attendances by a Fire and Rescue Authority (FRA) at fires in 2020-21 were grassland, woodland or crop related.



The Welsh FRAs attended 2,232 grassland, woodland and crop fires in 2020-21, an increase of 2% compared with 2019-20. The number of these fires is prone to fluctuation and in previous years larger year on year percentage changes have been seen.

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



(r) Revised data  
(p) Provisional data

- In 2020-21, almost three quarters of fires on grassland, woodland and crops were started deliberately. ([Table 4](#))
- Over half the grassland, woodland and crop fires in 2020-21 occurred in the months April and May 2020. Met Office weather data shows the highest levels of sunshine and lowest levels of rainfall occurred in these months in 2020-21. ([Table 5](#)).

### About this bulletin

This bulletin is complementary to data on [fire incidents](#) published in Sep 2021. It examines the impact and patterns in grassland, woodland and crop fires in the financial year 2020-21, a period within the coronavirus (COVID-19) pandemic together with trends from 2001-02. Numbers of grassland fires during 2020-21 may have been affected by the COVID-19 restrictions in place at times throughout the year.

The Welsh Government compiles these statistics from reports submitted by all three Fire and Rescue Authorities (FRAs) in Wales to the Home Office.

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## Section 1: Fires

Fires are classed as primary, secondary or chimney fires.

**Primary fires** include:

- any fire in a non-derelict buildings, vehicle, or outdoor structures
- any fire involving casualties or rescues
- any fire 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](#).

**Grassland, woodland and crop** locations 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.

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 fire-related false alarms. Numbers of grassland, woodland and crop fire related false alarms are not available prior to 2009-10.

Table 1 shows that Welsh FRAs attended 25,208 fires and fire false alarms in 2020-21. Of these, 13% or 3,316 (including 1,084 fire false alarms) related to grassland, woodland and crop locations. In 2020-21 attendances at grassland, woodland and crop fires and fire false alarms rose by 10% compared with 2019-20 but has fallen by 62% compared with 2010-11.

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

|   | 2016-17       | 2017-18       | 2018-19       | 2019-20(r)    | 2020-21(p)    |
|---|---------------|---------------|---------------|---------------|---------------|
| Primary fires   | 4,757         | 4,316         | 4,392         | 4,279         | 3,796         |
| <i>of which were grassland, woodland and crops</i>                              | 71            | 68            | 253           | 112           | 181           |
| Secondary fires   | 5,576         | 6,301         | 8,184         | 5,978         | 6,199         |
| <i>of which were grassland, woodland and crops</i>                              | 1,645         | 2,024         | 3,761         | 2,076         | 2,051         |
| <b>All fires (a)</b>  | <b>10,750</b> | <b>11,023</b> | <b>12,911</b> | <b>10,587</b> | <b>10,328</b> |
| <b><i>of which were grassland, woodland and crop fires</i></b>                  | <b>1,716</b>  | <b>2,092</b>  | <b>4,014</b>  | <b>2,188</b>  | <b>2,232</b>  |
| Fire false alarms   | 14,790        | 14,161        | 14,485        | 14,281        | 14,880        |
| <i>Fire false alarms with location recorded as grassland, woodland or crops</i> | 872           | 778           | 1,139         | 821           | 1,084         |
| <b>All fires and fire false alarms</b>  | <b>25,540</b> | <b>25,184</b> | <b>27,396</b> | <b>24,868</b> | <b>25,208</b> |
| <b><i>of which grassland, woodland and crop fires and fire false alarms</i></b> | <b>2,588</b>  | <b>2,870</b>  | <b>5,153</b>  | <b>3,009</b>  | <b>3,316</b>  |

(a) Includes chimney fires.

(r) Revised data.

(p) Provisional data.

**Fire false alarms:** 7% of fire false alarms relate to grassland, woodland and crop locations. The majority (98%) of the fire false alarms attended in 2020-21 by the FRAs on grassland, woodland and crops were due to calls made with good intent; only 2% were due to malicious calls. In 2020-21 FRAs in Wales attended 32% more fire false alarms on grassland, woodland and crops than in the previous year.

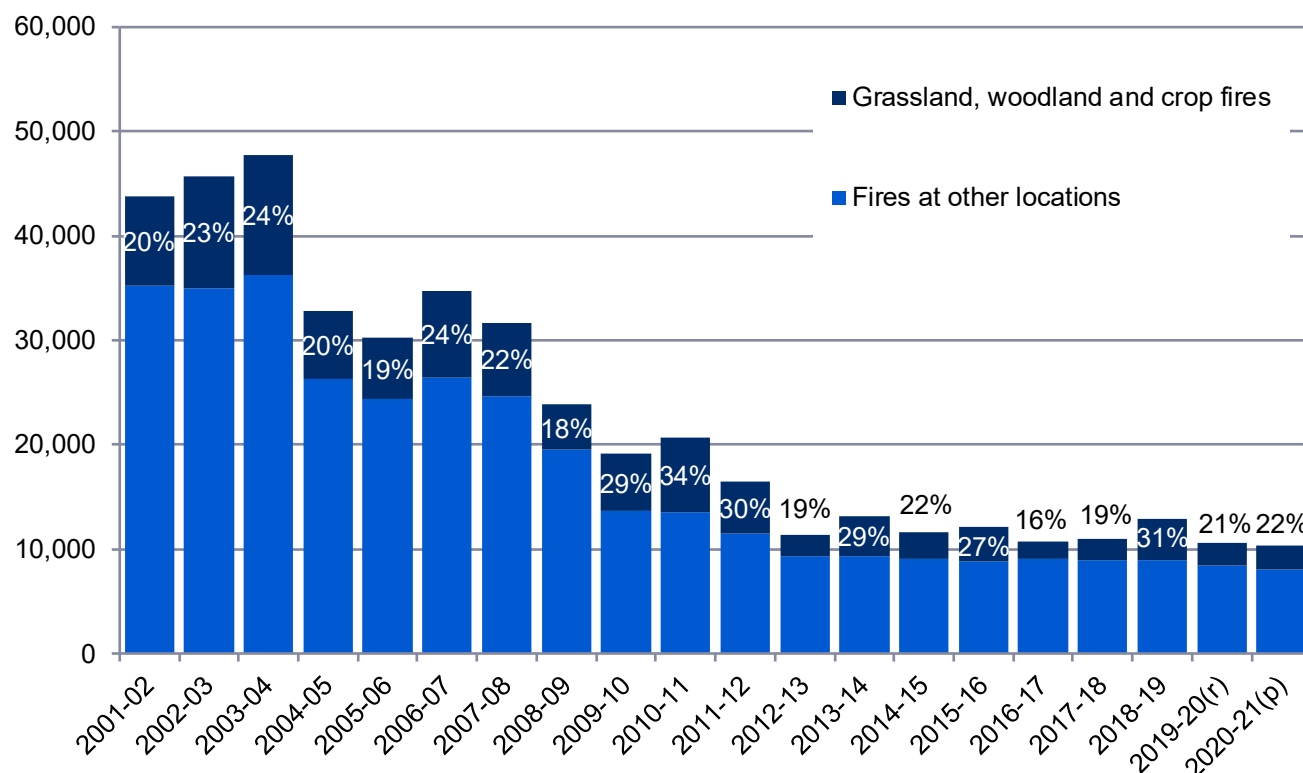
**Fires:** Of the 10,328 fires attended in Wales, 2,232 (22%) occurred on grassland, woodland and crops. Whilst only 5% of all primary fires took place on grassland, woodland or crops, 33% of secondary fires occurred on grassland, woodland or crops.

In 2020-21, the number of grassland, woodland and crop fires (excluding fire false alarms) attended by the Welsh FRAs increased by 2% compared with 2019-20. Compared with the peak figure in 2003-04, the 2020-21 figure is 81% lower. In recent years (since 2012-13) numbers have decreased and increased in alternate years; 2018-19 being the exception.

Numbers of fires in locations other than grassland, woodland and crops fell by 4% compared with 2019-20. Compared with the peak number in 2003-04 numbers have fallen by 78%. Charts 1 and 2 show how the number of fires (and of those, grassland, woodland and crop fires) varies each year.

Chart 2 shows the proportion of fires attended which occurred on grassland, woodland or crops, since 2001-02. During this period the proportion of fires occurring on grassland, woodland and crops range from a low of 16% (in 2016-17) up to 34% (in 2010-11).

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



(r) Revised data

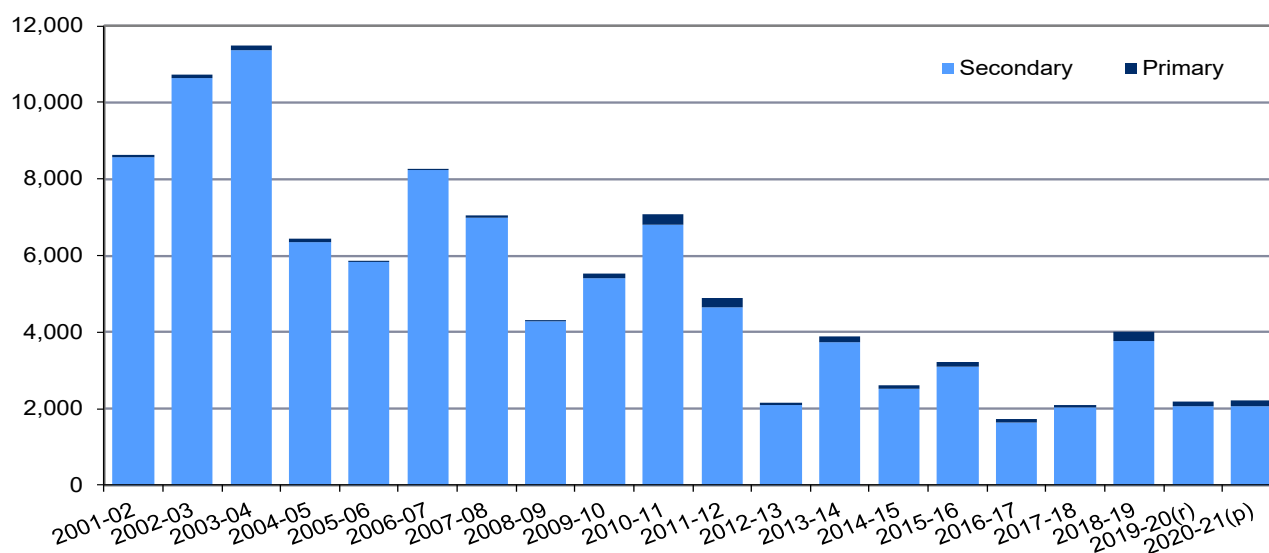
(p) Provisional data

Chart 3 shows the vast majority of grassland, woodland and crop fires attended are secondary fires (between 92 and 99% each year since 2001-02), and further shows the fluctuations in numbers. By definition, the majority of secondary fires occur outdoors and so numbers of these fires are likely to be influenced by weather conditions.

In 2020-21 there were 23% fewer grassland fires compared with the average for the last ten years, whilst there was around the same amount of sunshine and 10% more rainfall compared with the same period.

However the annual weather data cannot explain all the fluctuations; rainfall in 2016-17 was relatively low (3<sup>rd</sup> lowest over the last 20 years) and even lower than levels seen in 2003-04) and yet the number of grassland fires is the lowest (for the time period). The relationship between these fires and the weather is considered further in charts 7 and 8, utilising monthly data.

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



(r) Revised data.

(p) Provisional data.

### Primary grassland, woodland and crop fires

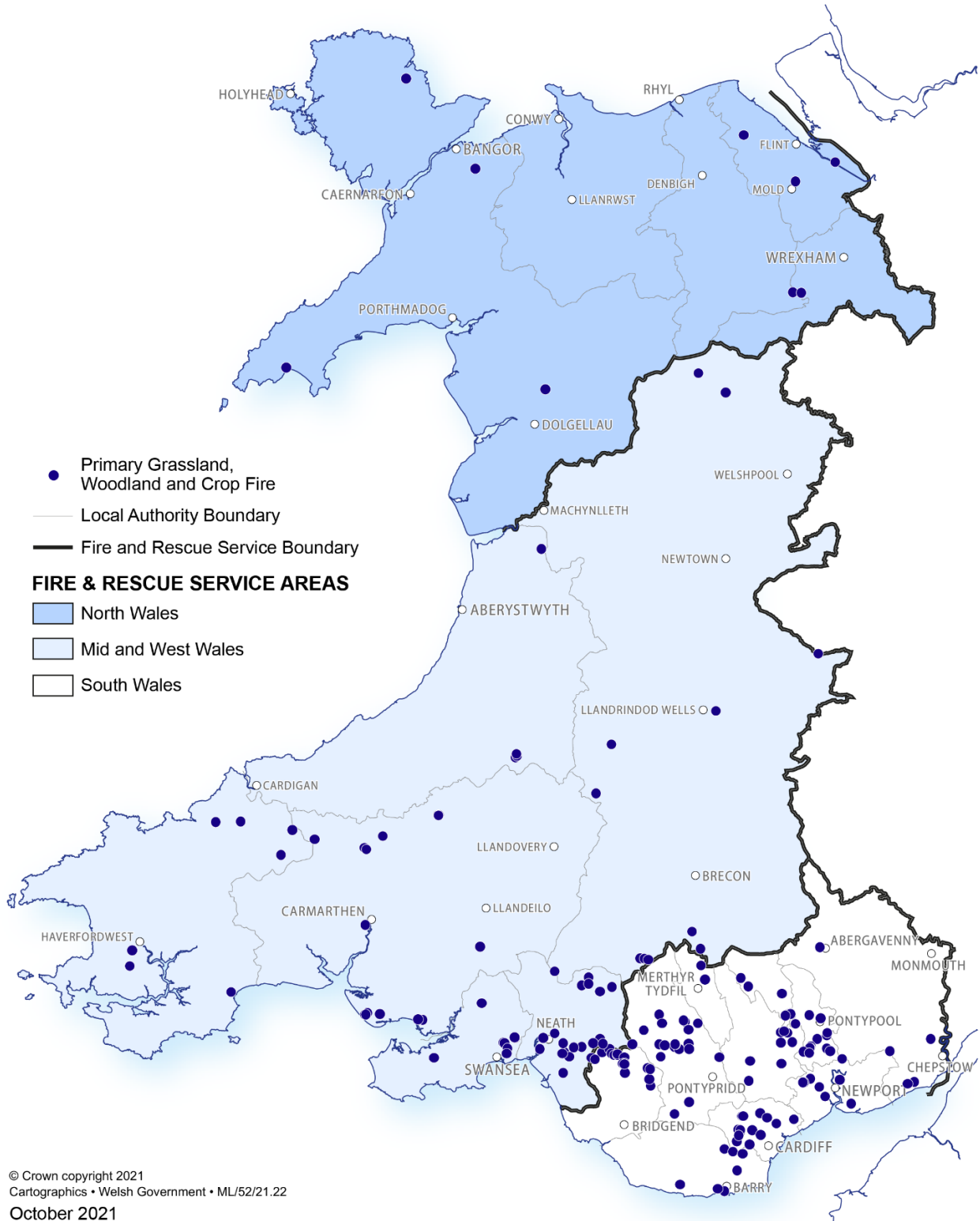
In 2020-21, 181 primary grassland, woodland and crop fires were attended in Wales, an increase of 62% on 2019-20. The locations of these primary fires are shown on the map on the following page. Over half the primary grassland fires in 2020-21 occurred in the South Wales FRA Region and 38% were in Mid and West Wales. The remaining 6% were in North Wales. Only North Wales saw a reduction in the number of primary grassland fires (down 9%). Mid and West Wales saw an increase of 55% and South Wales of 81%.

**Table 2: Numbers of primary grassland woodland and crop fires by Fire and Rescue Authority**

|   | North Wales | Mid and West Wales | South Wales | Wales |
|---|-------------|--------------------|-------------|-------|
| 2011-12                                 | 36          | 59                 | 161         | 256   |
| 2012-13                                 | 18          | 11                 | 34          | 63    |
| 2013-14                                 | 20          | 25                 | 83          | 128   |
| 2014-15                                 | 18          | 15                 | 51          | 84    |
| 2015-16                                 | 20          | 28                 | 70          | 118   |
| 2016-17                                 | 23          | 12                 | 36          | 71    |
| 2017-18                                 | 13          | 14                 | 41          | 68    |
| 2018-19                                 | 16          | 97                 | 140         | 253   |
| 2019-20                                 | 11          | 44                 | 57          | 112   |
| 2020-21(p)                              | 10          | 68                 | 103         | 181   |
| Percentage change<br>2019-20 to 2020-21 | -9          | 55                 | 81          | 62    |

(p) Provisional data

# Grassland, Woodland and Crop Primary Fires across Wales, 2020-21



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

Most categories of primary grassland fires saw increases, only heathland or moorland saw no percentage change and stacked/baled and standing crops saw a slight decrease.

There were 138 primary fires in woodland (76% of primary grassland fires) in 2020-21.

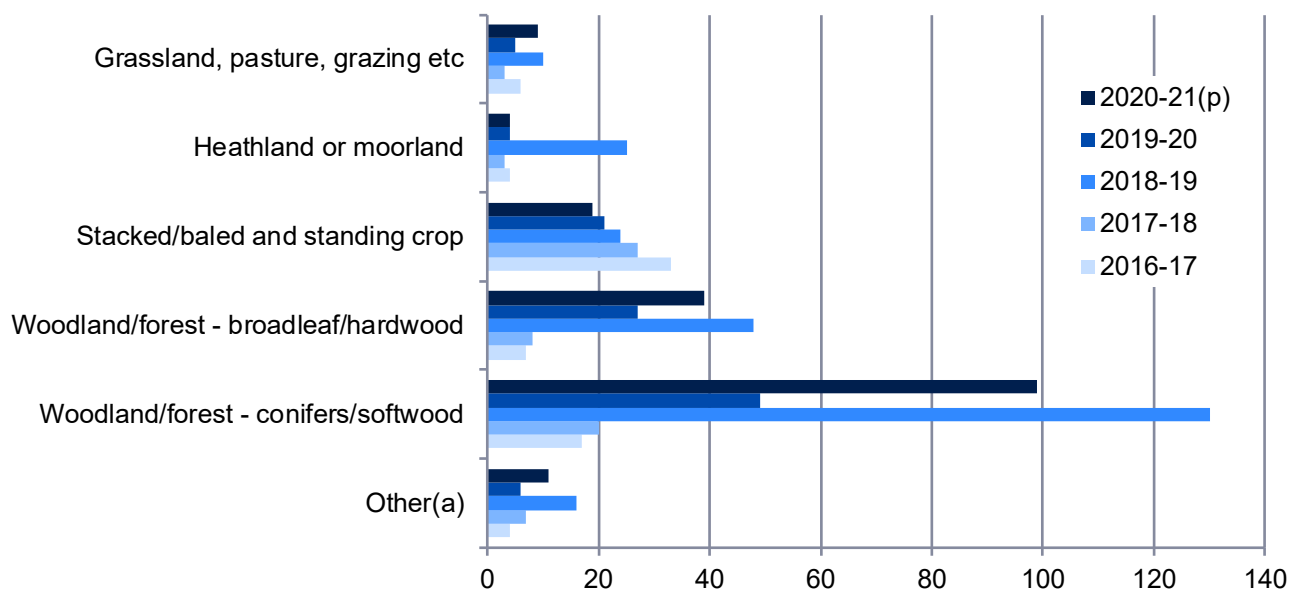
**Table 3: Number of primary grassland, woodland and crop fires, by location**

|   | 2016-17   | 2017-18   | 2018-19    | 2019-20    | 2020-21(p) |
|---|-----------|-----------|------------|------------|------------|
| Grassland, pasture, grazing etc                       | 6         | 3         | 10         | 5          | 9          |
| Heathland or moorland                                 | 4         | 3         | 25         | 4          | 4          |
| Stacked/baled and standing crop                       | 33        | 27        | 24         | 21         | 19         |
| Woodland/forest - broadleaf/hardwood                  | 7         | 8         | 48         | 27         | 39         |
| Woodland/forest - conifers/softwood                   | 17        | 20        | 130        | 49         | 99         |
| Other (a)   | 4         | 7         | 16         | 6          | 11         |
| <b>All primary grassland, woodland and crop fires</b> | <b>71</b> | <b>68</b> | <b>253</b> | <b>112</b> | <b>181</b> |

(a) Domestic gardens, hedge, nurseries and market gardens, roadside vegetation, scrub land and tree scrub.

(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, nurseries and market gardens, roadside vegetation, scrub land and tree scrub.

(p) Provisional data.



## Secondary grassland, woodland and crop fires

In 2020-21 there were 2,051 secondary grassland, woodland and crop fires in Wales, a reduction of 1% compared with 2019-20; the map on the next page shows the locations of these secondary fires. 46% of secondary grassland fires in 2020-21 occurred in the South Wales FRA region, whilst 39% occurred in Mid and West Wales and 15% in North Wales. Both North Wales and Mid and West Wales saw increases, of 11% and 5% respectively. South Wales saw a fall of 9% to its lowest number since 2016-17.

It is likely that the number of secondary fires during 2020-21 could have been affected by the restrictions introduced at times throughout the year due to the Covid-19 pandemic. Since many of these fires take place outdoors and are caused by human interaction, travel restrictions and social distancing measures may have had an impact. Secondary fires are also affected by weather conditions, further analysis of weather data occurs on pages 15 and 16.

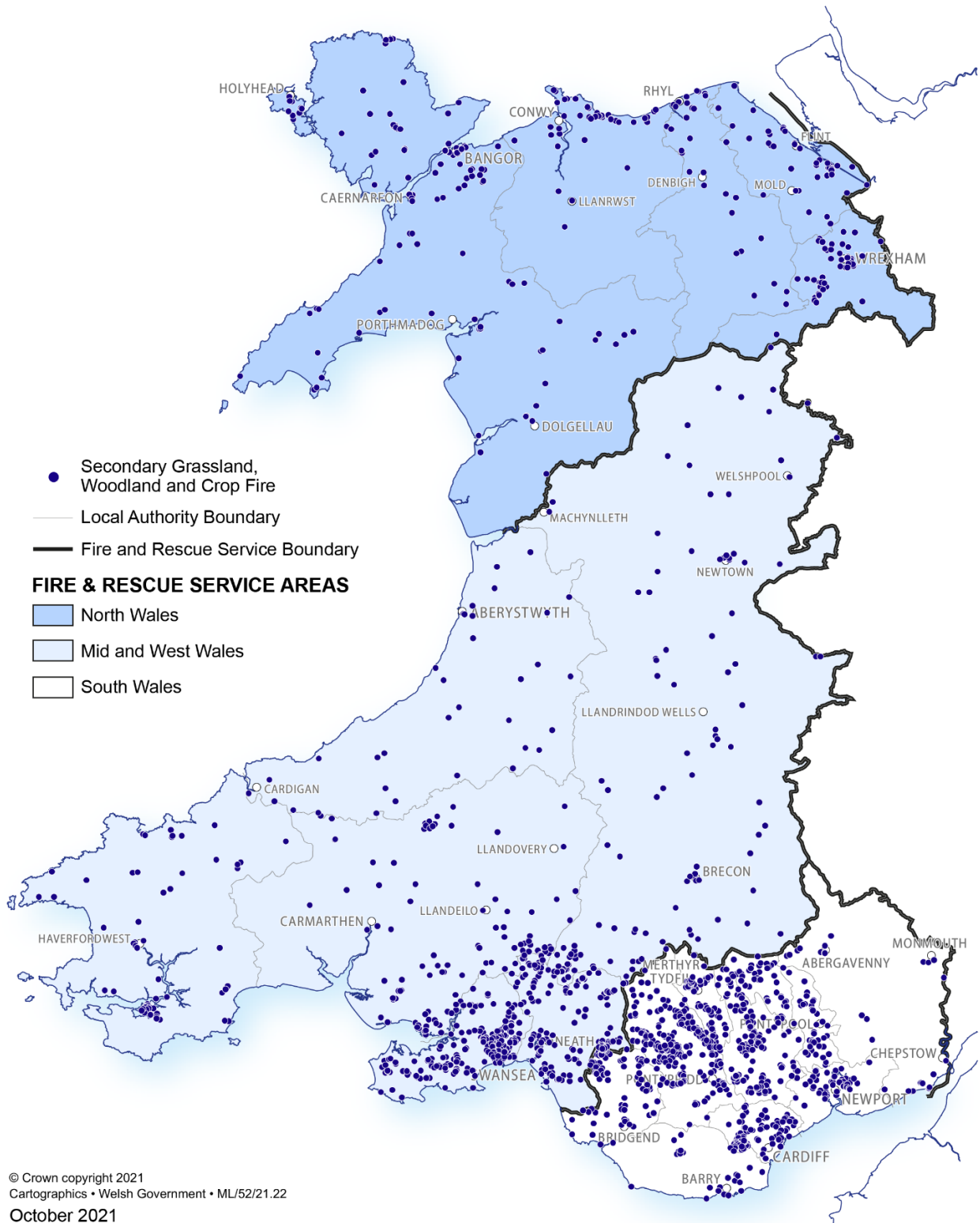
**Table 4: Numbers of secondary grassland, woodland and crop fires by Fire and Rescue Authority**

|   | North Wales | Mid and West Wales | South Wales | Wales |
|---|-------------|--------------------|-------------|-------|
| 2011-12                                 | 801         | 1,382              | 2,459       | 4,642 |
| 2012-13                                 | 264         | 713                | 1,105       | 2,082 |
| 2013-14                                 | 460         | 1,199              | 2,089       | 3,748 |
| 2014-15                                 | 393         | 835                | 1,301       | 2,529 |
| 2015-16                                 | 426         | 908                | 1,763       | 3,097 |
| 2016-17                                 | 276         | 474                | 895         | 1,645 |
| 2017-18                                 | 340         | 638                | 1,046       | 2,024 |
| 2018-19                                 | 638         | 1,169              | 1,954       | 3,761 |
| 2019-20(r)                              | 272         | 763                | 1,041       | 2,076 |
| 2020-21(p)                              | 301         | 799                | 951         | 2,051 |
| Percentage change<br>2019-20 to 2020-21 | 11          | 5                  | -9          | -1    |

(r) Revised data

(p) Provisional data

# Grassland, Woodland and Crop Secondary Fires across Wales, 2020-21



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 October 2021



Data mapped above are based on grid references; see the [Key Quality Information](#) for further details.

The largest percentage increase occurred in domestic gardens (34%). Scrub land saw the largest decrease compared with 2019-20, 66 fewer fires and a 13% fall. In 2020-21, 56% 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% each year since 2009-10.

**Table 5: Number of secondary grassland, woodland and crop fires, by location**

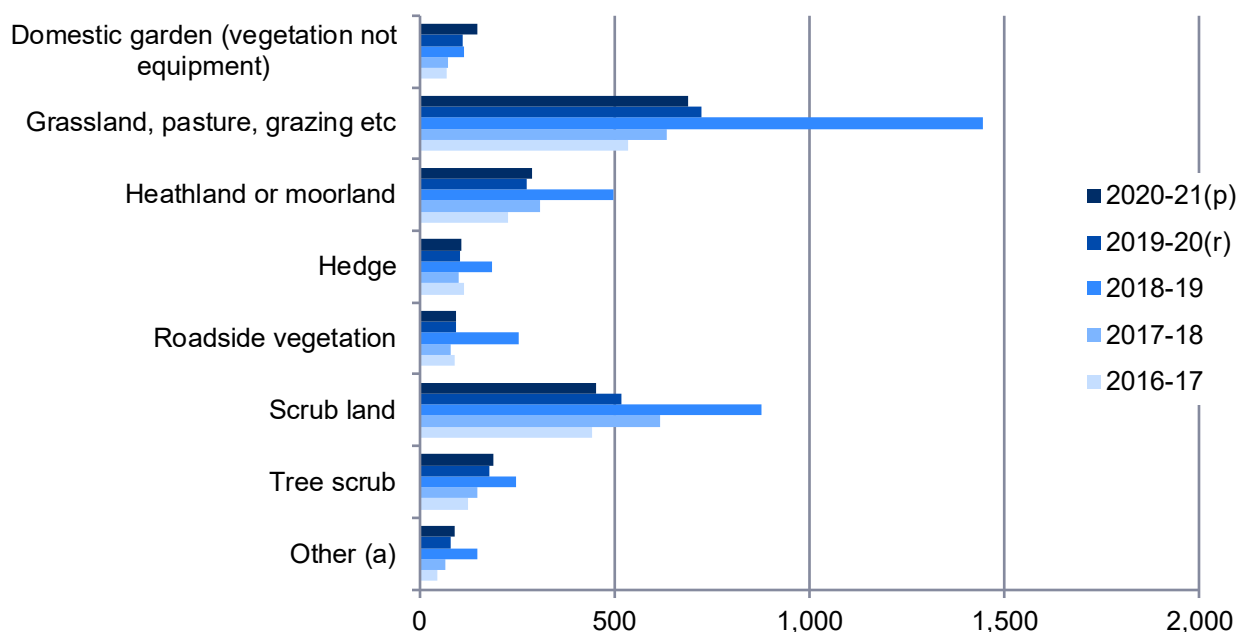
|   | 2016-17      | 2017-18      | 2018-19      | 2019-20(r)   | 2020-21(p)   |
|---|--------------|--------------|--------------|--------------|--------------|
| Canal/riverbank vegetation                                  | 17           | 30           | 74           | 28           | 50           |
| Domestic garden<br>(vegetation not equipment)               | 70           | 72           | 113          | 109          | 146          |
| Grassland, pasture, grazing etc                             | 535          | 635          | 1,446        | 721          | 689          |
| Heathland or moorland                                       | 225          | 310          | 495          | 275          | 287          |
| Hedge   | 113          | 100          | 184          | 102          | 106          |
| Roadside vegetation   | 91           | 80           | 253          | 94           | 93           |
| Scrub land  | 441          | 615          | 875          | 517          | 451          |
| Tree scrub  | 124          | 147          | 246          | 179          | 189          |
| Other (a)   | 29           | 35           | 75           | 51           | 40           |
| <b>All secondary grassland, woodland<br/>and crop fires</b> | <b>1,645</b> | <b>2,024</b> | <b>3,761</b> | <b>2,076</b> | <b>2,051</b> |

(a) Nurseries, market gardens, stacked/baled crop, woodland/forest - broadleaf/hardwood, woodland/forest - conifers/softwood, railway trackside vegetation and straw/stubble burning.

(r) Revised data

(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', canal/riverbank vegetation, railway trackside vegetation.

(r) Revised data

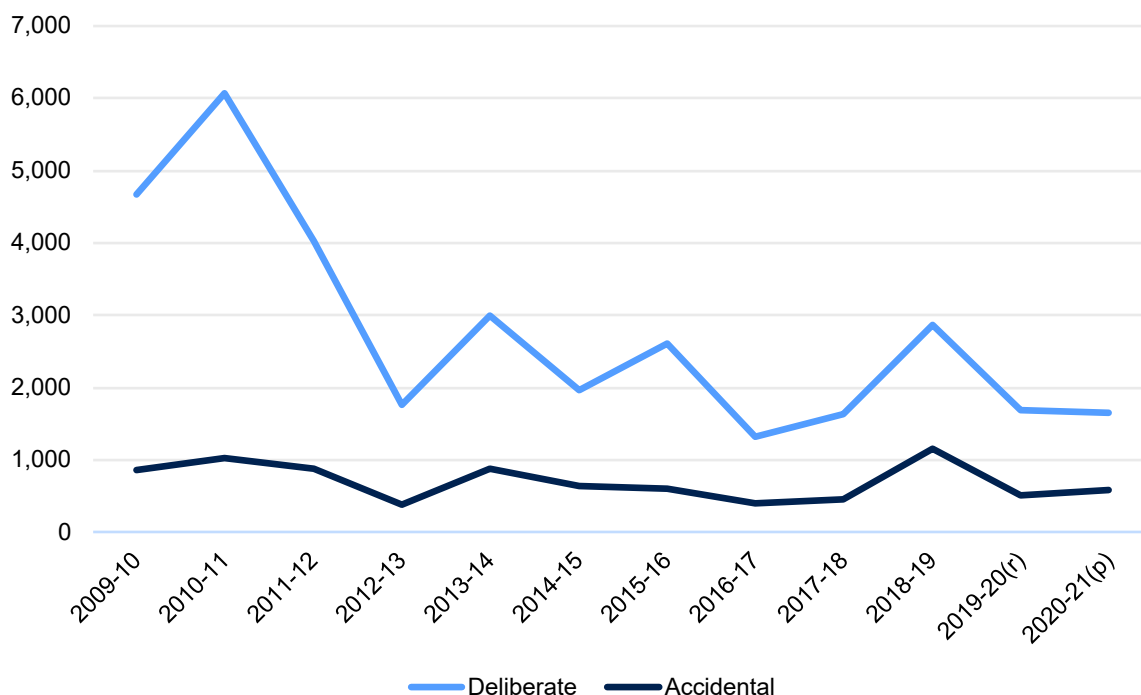
(p) Provisional data.

## Grassland, woodland and crop fires by motive

Since the introduction of the Incident Recording System (IRS) in April 2009 for collecting FRA incident data, greater detail relating to secondary fires has been recorded. This allows us to show a time series by motive from this date for all grassland, woodland and crop fires where previously only data for primary fires were available.

The chart below illustrates how much more fluctuation there is in the time series for deliberate fires than accidental fires. However we can also note that peaks and troughs, while less marked in the accidental time series, often mirror those in the deliberate fires time series. This could imply the effects of the weather, land management strategies and fire prevention work on all grassland fires.

**Chart 6: Grassland, woodland and crop fires by motive**



Around three quarters of grassland, woodland and crop fires were deliberate in 2020-21, a similar proportion to previous years. Numbers of deliberate grassland fires fell by 2% compared with 2019-20 (to 1,646 fires), whilst numbers of accidental grassland fires rose by 17% (to 586).

For both deliberate and accidental fires occurring on grassland, woodland and crops, the vast majority were secondary fires; 92% of deliberate grassland fires and 90% of accidental grassland fires were secondary.

Deliberate secondary grassland, woodland and crop fires made up 68% of all grassland woodland and crop fires in 2020-21.

**Table 6: Number and percentage of grassland, woodland and crop fires, by motive**

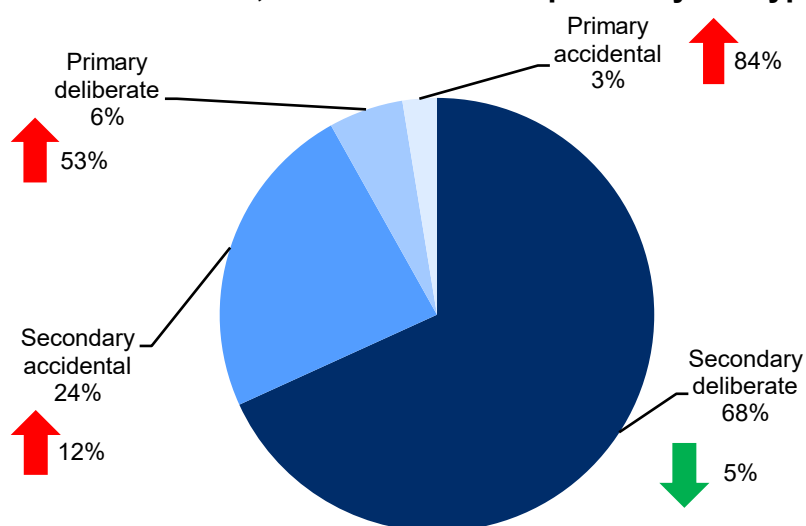
|                        | Number     |            |       | Percentage |            |     |
|------------------------|------------|------------|-------|------------|------------|-----|
|                        | Deliberate | Accidental | All   | Deliberate | Accidental | All |
| <b>Primary fires</b>   |            |            |       |            |            |     |
| 2016-17                | 48         | 23         | 71    | 68         | 32         | 100 |
| 2017-18                | 48         | 20         | 68    | 71         | 29         | 100 |
| 2018-19                | 176        | 77         | 253   | 70         | 30         | 100 |
| 2019-20                | 81         | 31         | 112   | 72         | 28         | 100 |
| 2020-21(p)             | 124        | 57         | 181   | 69         | 31         | 100 |
| <b>Secondary fires</b> |            |            |       |            |            |     |
| 2016-17                | 1,270      | 375        | 1,645 | 77         | 23         | 100 |
| 2017-18                | 1,588      | 436        | 2,024 | 78         | 22         | 100 |
| 2018-19                | 2,686      | 1,075      | 3,761 | 71         | 29         | 100 |
| 2019-20(r)             | 1,604      | 472        | 2,076 | 77         | 23         | 100 |
| 2020-21(p)             | 1,522      | 529        | 2,051 | 74         | 26         | 100 |
| <b>All fires</b>       |            |            |       |            |            |     |
| 2016-17                | 1,318      | 398        | 1,716 | 77         | 23         | 100 |
| 2017-18                | 1,636      | 456        | 2,092 | 78         | 22         | 100 |
| 2018-19                | 2,862      | 1,152      | 4,014 | 71         | 29         | 100 |
| 2019-20(r)             | 1,685      | 503        | 2,188 | 77         | 23         | 100 |
| 2020-21(p)             | 1,646      | 586        | 2,232 | 74         | 26         | 100 |

(r) Revised data

(p) Provisional data.

Accidental secondary grassland fires made up 24% of all grassland, woodland and crop fires in 2020-21 and increased by 12%.

**Chart 7: Grassland, woodland and crop fires by fire type and motive, 2020-21**



Of the 586 accidental (primary and secondary) grassland, woodland and crop fires in 2020-21, 24% occurred on grassland, pasture, grazing etc. and 18% on heathland and moorland. There were 1,646 deliberate (primary and secondary) grassland, woodland and crop fires in 2020-21, 34% of which occurred on grassland, pasture, grazing etc. and 25% on scrub land.

## Grassland, woodland and crop fires by month

The majority of grassland, woodland and crop fires take place in the spring and summer months. April 2020 recorded the highest proportion (34%) of grassland fires for the financial year 2020-21 and the number increased by 8% compared with 2019-20.

May saw almost a quarter of the grassland fires in 2020-21 and 13% occurred in March.

**Table 7: Number and percentage of grassland, woodland and crop fires, by month**

|                    | Number       |              |              |              |              | Percentage |            |            |            |            |
|--------------------|--------------|--------------|--------------|--------------|--------------|------------|------------|------------|------------|------------|
|                    | 2016-17      | 2017-18      | 2018-19      | 2019-20(r)   | 2020-21(p)   | 2016-17    | 2017-18    | 2018-19    | 2019-20    | 2020-21    |
| April              | 400          | 803          | 202          | 690          | 748          | 23         | 38         | 5          | 32         | 34         |
| May                | 302          | 482          | 401          | 427          | 545          | 18         | 23         | 10         | 20         | 24         |
| June               | 159          | 146          | 537          | 83           | 222          | 9          | 7          | 13         | 4          | 10         |
| July               | 109          | 215          | 1,862        | 325          | 73           | 6          | 10         | 46         | 15         | 3          |
| August             | 148          | 81           | 233          | 96           | 110          | 9          | 4          | 6          | 4          | 5          |
| September          | 52           | 36           | 96           | 103          | 89           | 3          | 2          | 2          | 5          | 4          |
| October            | 84           | 44           | 103          | 15           | 25           | 5          | 2          | 3          | 1          | 1          |
| November           | 81           | 37           | 61           | 16           | 36           | 5          | 2          | 2          | 1          | 2          |
| December           | 33           | 18           | 13           | 18           | 14           | 2          | 1          | 0          | 1          | 1          |
| January            | 32           | 29           | 26           | 13           | 9            | 2          | 1          | 1          | 1          | 0          |
| February           | 45           | 133          | 190          | 35           | 69           | 3          | 6          | 5          | 2          | 3          |
| March              | 271          | 68           | 290          | 367          | 292          | 16         | 3          | 7          | 17         | 13         |
| <b>Total fires</b> | <b>1,716</b> | <b>2,092</b> | <b>4,014</b> | <b>2,188</b> | <b>2,232</b> | <b>100</b> | <b>100</b> | <b>100</b> | <b>100</b> | <b>100</b> |

(r) Revised data

(p) Provisional data.

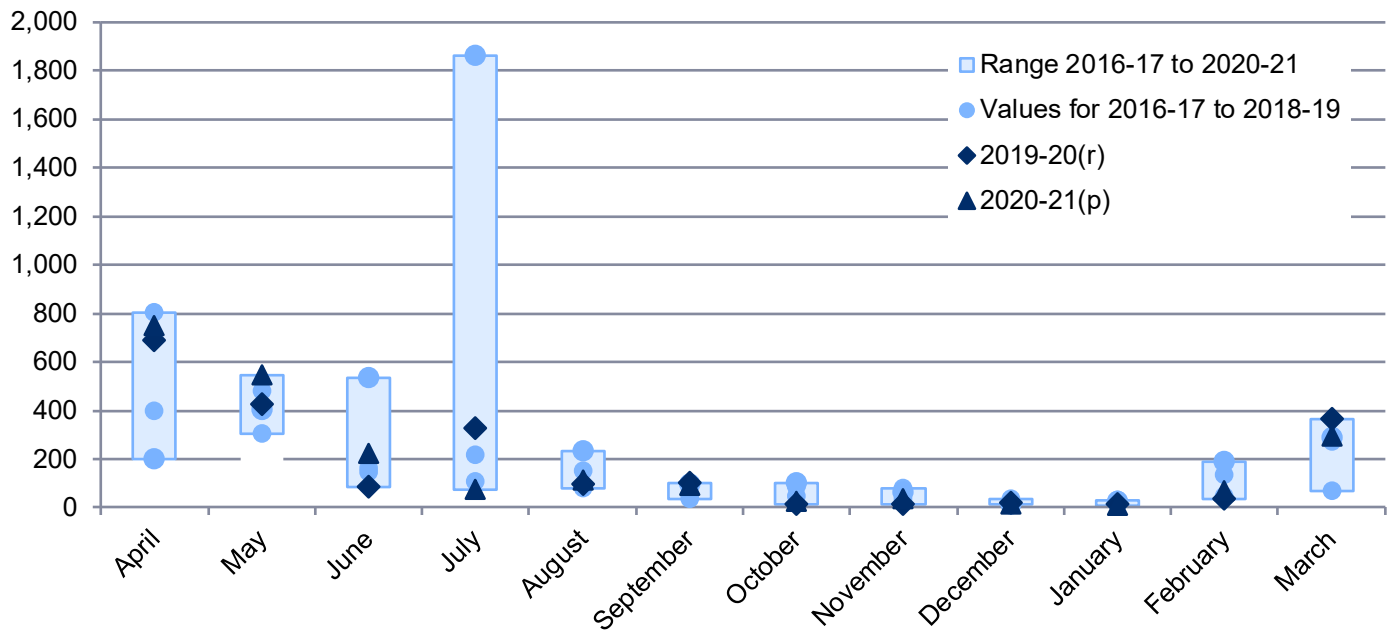
Seven months of 2020-21 saw increases in numbers of grassland, woodland and crop fires compared with the previous year. The largest of these was seen in June, when numbers rose by 167%.

The largest decrease was seen in July when numbers fell by 78%.

On average there were 25 grassland fires each day in April 2020, compared with 23 each day in April 2019 and 81 in April 2010 (the highest daily average in the time series). In July 2018 there were on average 60 grassland fires a day, in July 2019 this fell to an average of 10 a day; in July 2020 this average fell further still to 2 fires a day.

Chart 8 identifies the grassland, woodland and crop fire data in 2020-21 and 2019-20, along with showing the years 2016-17 to 2018-19, and highlights which months are most volatile in grassland fire occurrences. From the chart we can see little variation in the numbers in the months November to January, but there is a wider spread during the spring to summer months March through to July.

**Chart 8: Number of grassland, woodland and crop fires, by month**



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

The occurrence of outdoor fires is likely to be influenced by the weather. Data from the Met Office shows that in 2020-21, those months with the most sunshine and least rainfall had the most fires (April and May). April 2020 saw almost over third of the grassland fires in 2020-21 and this month had the second most sun and second least rain. May 2020 was the sunniest and the driest and accounted for almost a quarter of the grassland fires in the year. In the last 8 years April has had the most fires each year except for 2018-19 when there was a large number of fires in July. The Met Office have produced a [factsheet explaining further the links between weather and the occurrence of grassland fires](#).

In July 2020 there were 78% fewer fires than on July 2019. This month also saw the lowest number of hours of sunshine since 2011-12, and more than double the amount of rain in July 2019.

February 2021 saw almost double the number of fires compared with February 2020; levels of rainfall in February were almost half the levels in February 2020 when Wales saw extensive flooding.

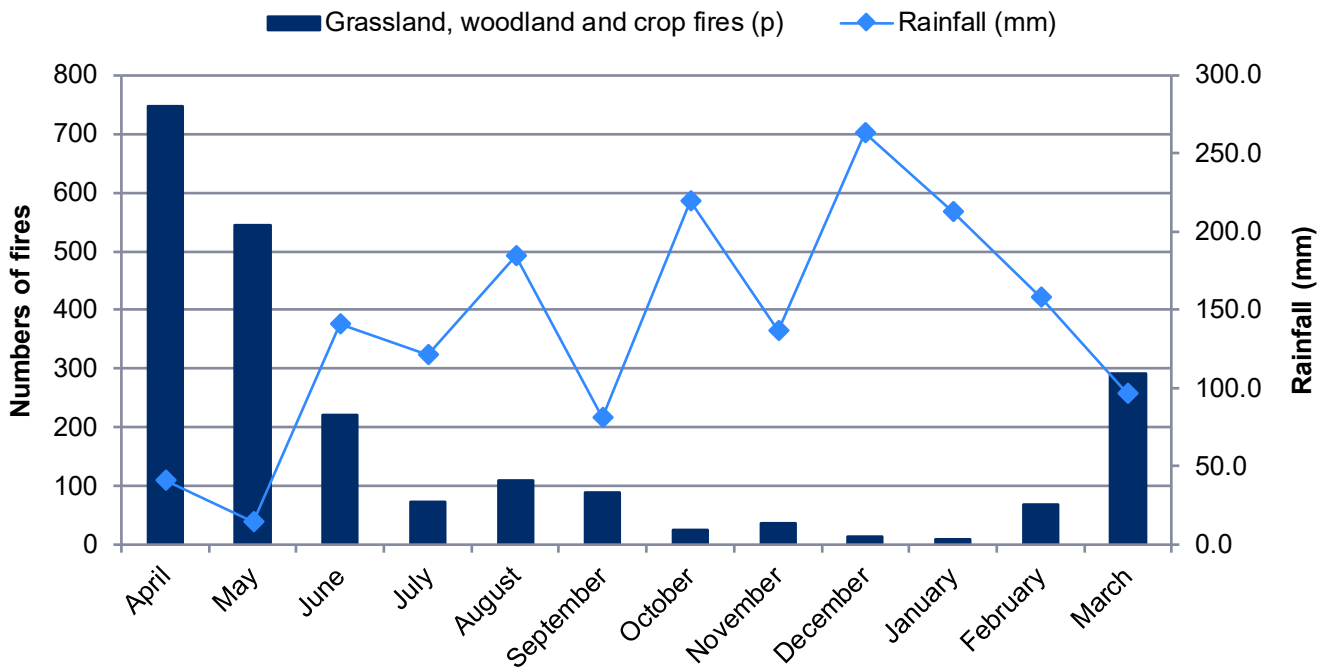
However, weather data cannot explain all the fluctuations; for example October 2020 had fewer hours of sunshine and more rainfall than October 2019, but saw more fires. This may be due to the weather data not being detailed enough (either by time or geography) but there may also be other factors influencing the numbers of fires.

It should be noted that other weather conditions such as snow and ice may also affect the number of fires in the winter.

[Weather data are available from the Met Office.](#)

Chart 9 shows the relationship between the number of grassland, woodland and crop fires and the levels of rainfall each month in 2020-21. Broadly speaking, when the levels of rainfall are high (as in October to February) the number of fires are low and those months with low levels of rainfall (April, May and March) had higher numbers of fires.

**Chart 9: Number of grassland, woodland and crop fires and rainfall levels, by month, 2020-21**

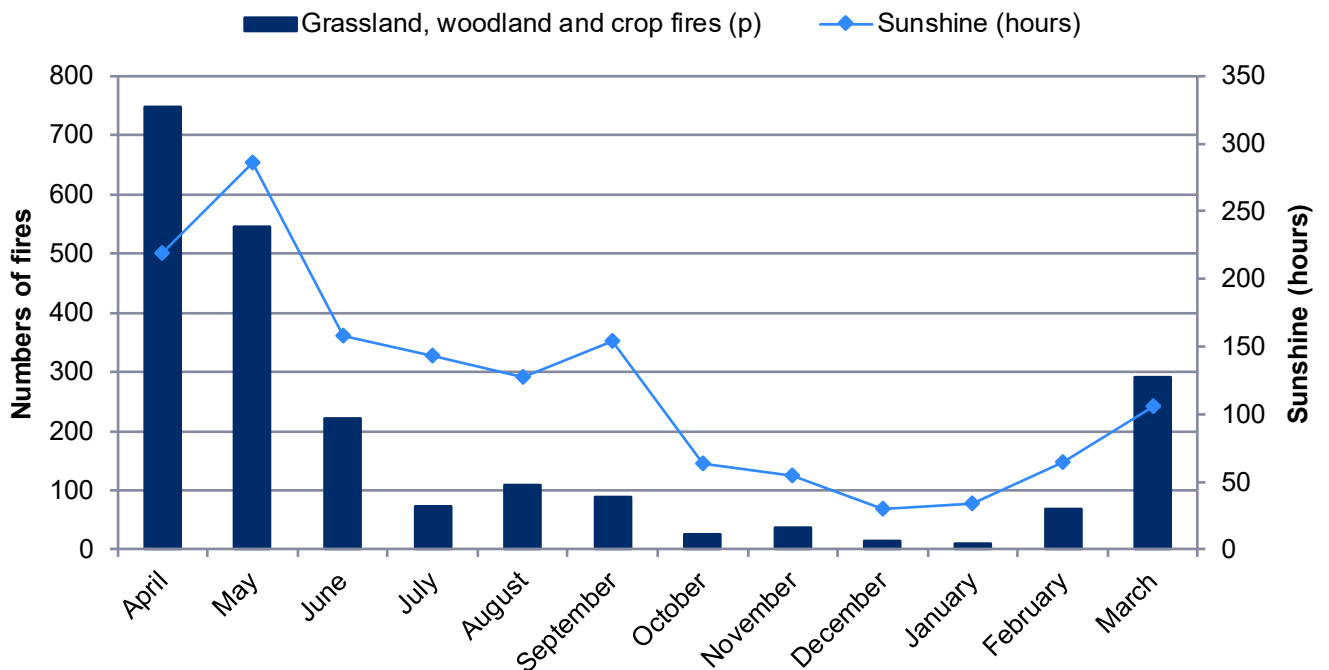


Source: Incident Recording System, Met Office

(p) Provisional data

The correlation with sunshine is seen in chart 10; where there were more hours of sunshine (for instance in April to June and March) there were with higher numbers of fires, whilst the months October to February have fewer hours of sunshine and fewer fires.

**Chart 10: Numbers of grassland, woodland and crop fires and hours of sunshine, by month, 2020-21**



Source: Incident Recording System, Met Office

(p) Provisional data



## Fires and false alarms by Fire and Rescue Authority and Local Authority

Until 2020-21, throughout the time series shown in table 8, South Wales FRA attended at least half the grassland, woodland and crop fires occurring in Wales each year; in 2020-21 this proportion fell to 47%. Of the 2,232 grassland fires in 2020-21, 39% were in Mid and West Wales and 14% were in North Wales.

**Table 8: Number and percentage of grassland, woodland and crop fires, by Fire and Rescue Authority**

|   | Number         |                       |                |       | Percentage     |                       |                |
|---|----------------|-----------------------|----------------|-------|----------------|-----------------------|----------------|
|   | North<br>Wales | Mid and<br>West Wales | South<br>Wales | Wales | North<br>Wales | Mid and<br>West Wales | South<br>Wales |
| 2011-12                                 | 837            | 1,441                 | 2,620          | 4,898 | 17             | 29                    | 53             |
| 2012-13                                 | 282            | 724                   | 1,139          | 2,145 | 13             | 34                    | 53             |
| 2013-14                                 | 480            | 1,224                 | 2,172          | 3,876 | 12             | 32                    | 56             |
| 2014-15                                 | 411            | 850                   | 1,352          | 2,613 | 16             | 33                    | 52             |
| 2015-16                                 | 446            | 936                   | 1,833          | 3,215 | 14             | 29                    | 57             |
| 2016-17                                 | 299            | 486                   | 931            | 1,716 | 17             | 28                    | 54             |
| 2017-18                                 | 353            | 652                   | 1,087          | 2,092 | 17             | 31                    | 52             |
| 2018-19                                 | 654            | 1,266                 | 2,094          | 4,014 | 16             | 32                    | 52             |
| 2019-20(r)                              | 283            | 807                   | 1,098          | 2,188 | 13             | 37                    | 50             |
| 2020-21(p)                              | 311            | 867                   | 1,054          | 2,232 | 14             | 39                    | 47             |
| Percentage change<br>2019-20 to 2020-21 | 10             | 7                     | -4             | 2     | .              | .                     | .              |

(r) Revised data

(p) Provisional data.

. Not applicable

The number of grassland, woodland and crop fires only fell in South Wales (by 4%) in 2020-21; in North Wales and Mid and West Wales numbers rose by 10% and 7% respectively. Compared with 2001-02 the number of grassland, woodland and crop fires are lower by 63% in Mid and West Wales, 70% in North Wales and 80% in South Wales.

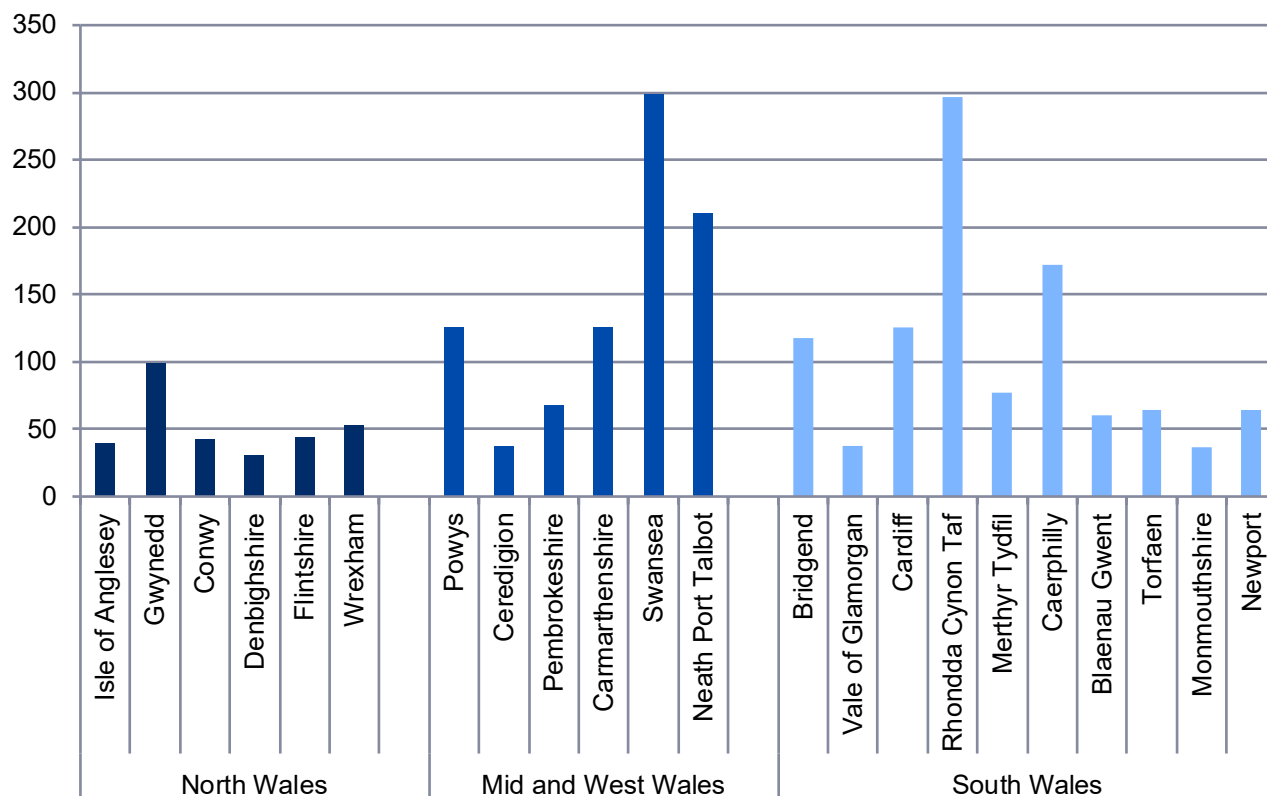
Swansea and Rhondda Cynon Taf Local Authorities (LAs) had the highest number of grassland, woodland and crop fires in Wales in 2020-21 with 299 and 297 respectively (each equating to 13% of the grassland fires in Wales). Denbighshire had the smallest number with 31 (1% of those in Wales). Similar proportions were seen in earlier years.

15 LAs saw an increase in the number of grassland, woodland and crop fires in 2020-21 (compared with 2019-20); the largest increases were in Wrexham (61%), Powys (47%), Pembrokeshire (45%) and Denbighshire (41%), though numbers in these LAs are still relatively small, making up a total of 12% of the grassland fires in Wales.

The largest decreases were seen in Newport (39%), Bridgend (18%) and Flintshire (17%). The figure in Newport (64 grassland fires) is the lowest in the time series for this LA.

Compared with 2011-12, 14 LAs have seen decreases of at least 50%; only one LA has seen an increase, Ceredigion of 3%, but numbers of grassland fires in this LA are comparatively low and have been stable over time.

**Chart 11: Number of grassland, woodland and crop fires, by Fire and Rescue Authority and Local Authority 2020-21(p)(a)**



(a) Local authorities have been assigned to incidents based on grid references; see the Key Quality Information for further details. Local Authority data are available on [StatsWales](#).

(p) Provisional data.

In 11 LAs, 'grassland and pasture' were the largest category of location of grassland, woodland and crop fires in 2020-21. Of these, in Neath Port Talbot 45% of grassland, woodland and crop fires occurred on grassland and pasture; this is the highest proportion of all the LAs.

Fires on heathland and moorland made up the largest category of grassland fires in 5 LAs, 3 of which occurred in North Wales; the largest percentage being in Gwynedd (57%).

For 3 LAs (all of which were in the South Wales FRA region), the largest category was scrub land; Rhondda Cynon Taf had the highest percentage at 46%.

In 7 LAs, over 90% of all grassland, woodland and crop fires were started deliberately, all 7 being in the South Wales FRA region. The highest proportion which were started deliberately occurred in Merthyr Tydfil (96%), closely followed by Rhondda Cynon Taf (95%), Vale of Glamorgan (92%), Caerphilly (92%), Bridgend (91%), Torfaen (91%) and Blaenau Gwent (90%).

Gwynedd and Ceredigion had the smallest percentages of fires started deliberately (19% and 21% respectively).

In 2020-21 Gwynedd had the most accidental grassland fires in Wales, making up 14% of the grassland fires in the LA.

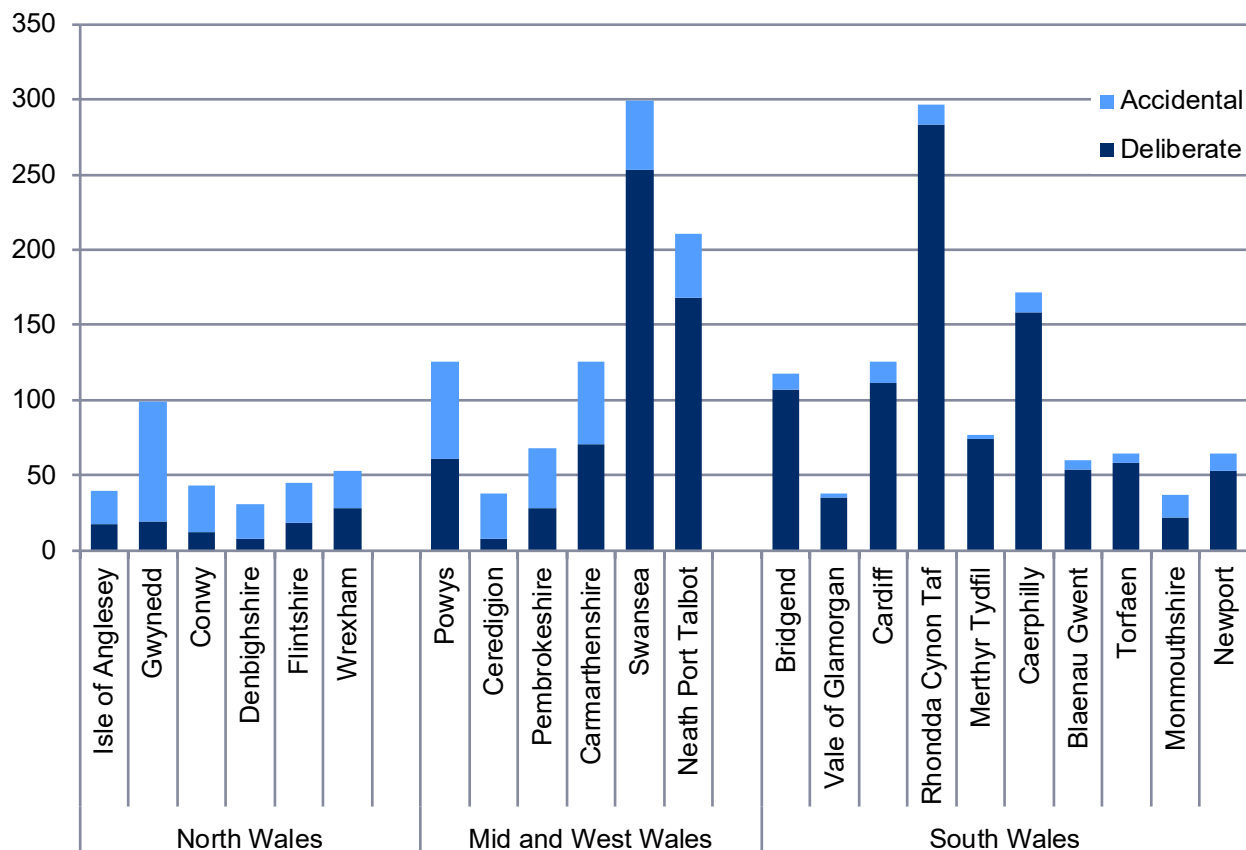
13 LAs saw an increase in the number of deliberate grassland, woodland and crop fires in 2020-21 (compared with 2019-20). The largest % increase (60%) was seen in Ceredigion though the actual number was one of the lowest of all the LAs. A further 6 LAs saw increases of more than 20%, Carmarthenshire (31%), Isle of Anglesey (31%), Vale of Glamorgan (30%), Pembrokeshire (27%), Torfaen (26%) and Powys (24%).

8 LAs saw decreases, the largest percentage decrease was in Gwynedd of 54%. A further 3 LAs saw decreases of more than 20%, Newport (44%), Conwy (33%) and Bridgend (21%).

1 LA (Monmouth) saw no percentage change.

All but two LAs have seen decreases compared with 2011-12, the largest percentage change being in Conwy (83%). Only Ceredigion and Carmarthenshire saw increases compared with 2011-12 (33% and 8% respectively) but numbers in these LAs are relatively small.

**Chart 12: Numbers of grassland, woodland and crop fires by local authority and motive, 2020-21(a)(p)**



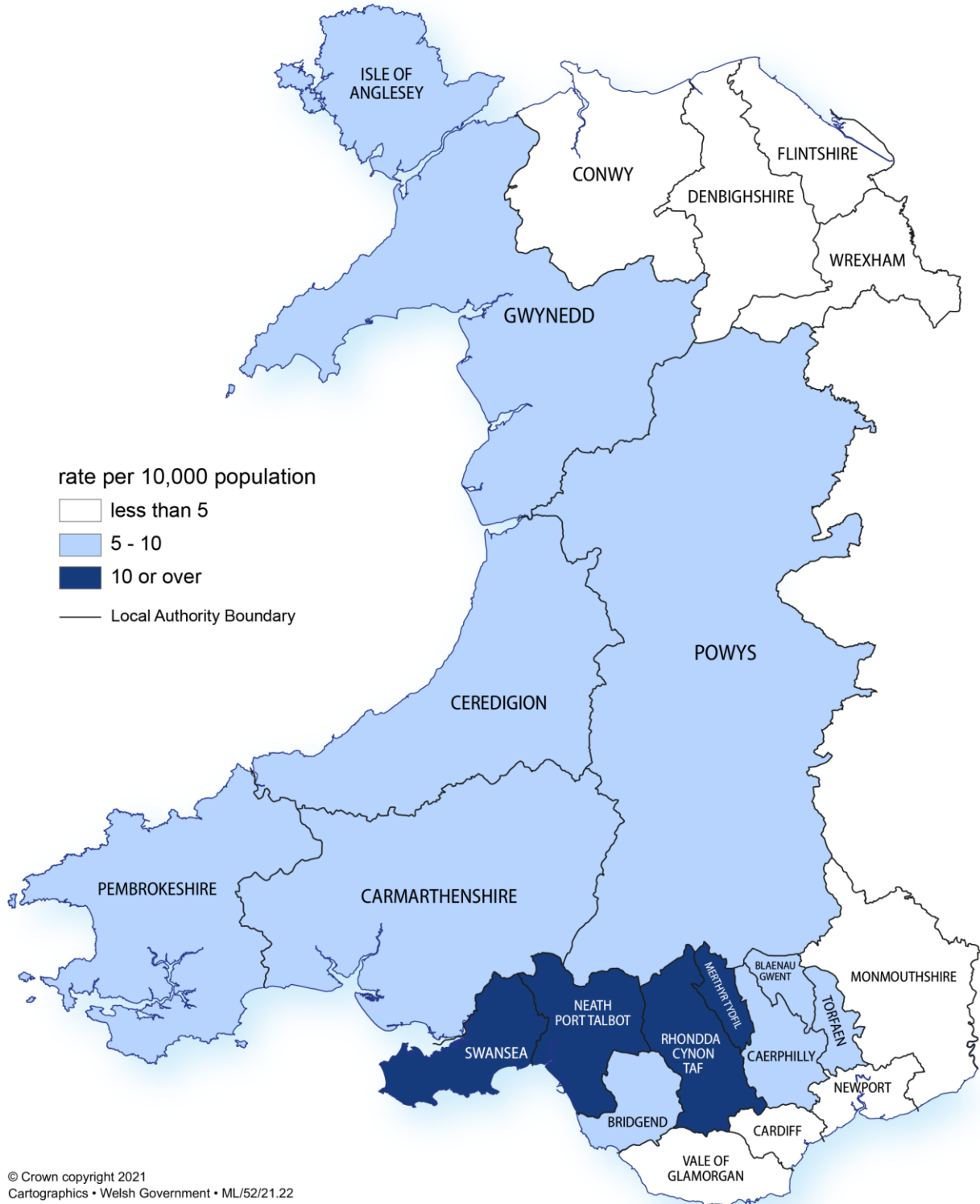
(a) Local authorities have been assigned to incidents based on grid references; see the Key Quality Information for further details.

(p) Provisional data.

The map on the next page shows rates of grassland fires per 10,000 population for each Local Authority in Wales in 2020-21.

Neath Port Talbot has the highest rate in 2020-21 with 15 fires occurring for every 10,000 people (the same as 2019-20 when it was also highest); Vale of Glamorgan has the lowest rate of 2.8 per 10,000 population, a similar rate to that in 2019-20.

# Grassland, Woodland and Crop fires per 10,000 population by Local Authority 2020-21



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 October 2021



## Fire false alarms

Data on fire false alarms on grassland woodland and crops became available with the introduction of IRS in April 2009.

There was a rise of 32% in the number of grassland, woodland and crop related fire false alarms attended by FRAs in 2020-21 (compared with 2019-20). All 3 FRAs saw increases in numbers; 42% in Mid and West Wales, 36% in North Wales and 23% in South Wales. All 3 FRAs have seen decreases compared with a decade ago; 34% in North Wales, 27% in South Wales and 25% in Mid and West Wales.

Only 2% of these fire false alarms in 2020-21 were due to malicious calls, with the remaining 98% due to good intent. South Wales continued to have the highest number of malicious calls relating to grassland, woodland and crop fire false alarms, which in turn equated to 3% of the grassland, woodland and crop fire false alarms attended in the region.

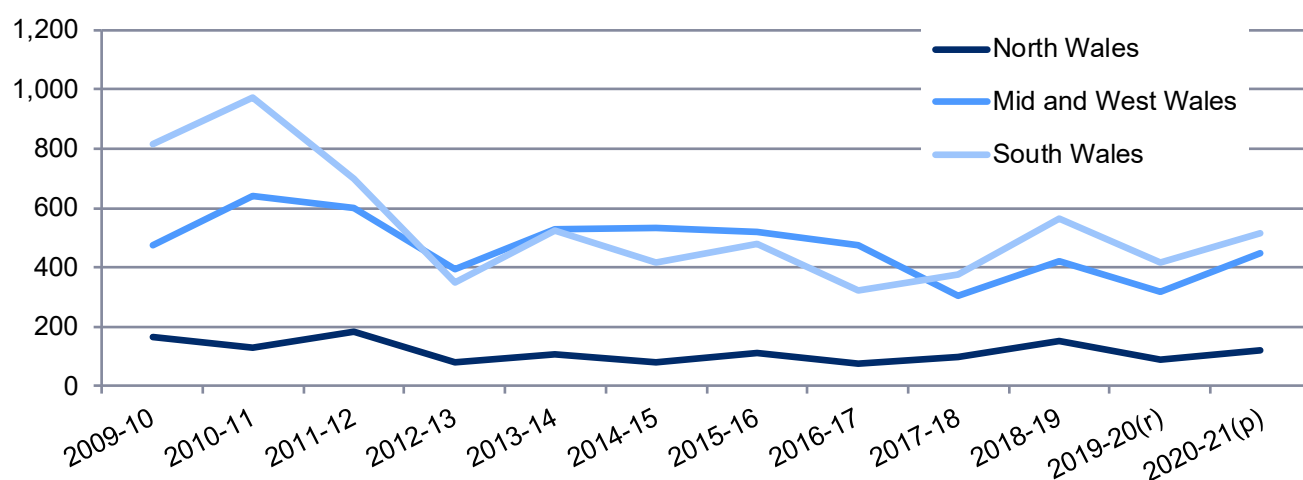
**Table 9: Number of grassland, woodland and crop fire false alarms, by Fire and Rescue Authority**

|   | North Wales | Mid and West Wales | South Wales | Wales |
|---|-------------|--------------------|-------------|-------|
| 2011-12                                 | 183         | 599                | 701         | 1,483 |
| 2012-13                                 | 81          | 394                | 348         | 823   |
| 2013-14                                 | 105         | 528                | 523         | 1,156 |
| 2014-15                                 | 81          | 531                | 416         | 1,028 |
| 2015-16                                 | 112         | 521                | 480         | 1,113 |
| 2016-17                                 | 76          | 475                | 321         | 872   |
| 2017-18                                 | 96          | 306                | 376         | 778   |
| 2018-19                                 | 153         | 421                | 565         | 1,139 |
| 2019-20(r)                              | 89          | 316                | 416         | 821   |
| 2020-21(p)                              | 121         | 450                | 513         | 1,084 |
| Percentage change<br>2019-20 to 2020-21 | 36          | 42                 | 23          | 32    |

(r) Revised data

(p) Provisional data

**Chart 13: Number of grassland, woodland and crop related fire false alarms, by Fire and Rescue Authority**



(r) Revised data.

(p) Provisional data.

## Section 2: Casualties from grassland, woodland and crop fires

Since 2011-12 there have been fewer than 10 casualties each year resulting from grassland, woodland and crop fires.

There has been one fatal casualty in a grassland, woodland and crop fire since 2001-02, which occurred in 2007-08. Since 2001-02 there have been 106 non-fatal casualties in these fires; 43% of the injuries incurred were burns and 32% were sent for precautionary checks.

Data on rescues from fires became available with the introduction of IRS in April 2009. Since then 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 3 non-fatal casualties in 2020-21, 3 fewer than in 2019-20, although numbers tend to be small and are prone to fluctuation. These 3 casualties equate to less than 1% of all non-fatal fire casualties in Wales in 2020-21.

Fires started deliberately have accounted for 28% of non-fatal casualties from grassland, woodland and crop fires since 2011-12.

Since 2011-12, 41% of grassland, woodland and crop related casualties occurred in Mid and West Wales, 28% in North Wales and 30% in South Wales.

**Table 10: Number of casualties and rescues from grassland, woodland and crop fires**

|            | Fatalities | Non-fatal casualties | Rescues (no injury) |
|------------|------------|----------------------|---------------------|
| 2011-12    | 0          | 10                   | 0                   |
| 2012-13    | 0          | 5                    | 0                   |
| 2013-14    | 0          | 1                    | 0                   |
| 2014-15    | 0          | 6                    | 0                   |
| 2015-16    | 0          | 6                    | 1                   |
| 2016-17    | 0          | 2                    | 0                   |
| 2017-18    | 0          | 5                    | 0                   |
| 2018-19    | 0          | 2                    | 0                   |
| 2019-20    | 0          | 6                    | 0                   |
| 2020-21(p) | 0          | 3                    | 0                   |

(p) Provisional data.

### 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 2020-21, around half the primary grassland, woodland and crop fires in Wales damaged 20 square metres or less. A further 35% damaged over 200 square metres. All size categories of primary fires saw increases.

For secondary fires, the majority (59%) damaged 20 square metres or less. Almost a fifth of secondary fires damaged an area over 200 square metres, whilst nearly a quarter damaged between 21 and 200 square metres.

Overall the number of grassland, woodland and crop fires in 2020-21 in each category of area damaged did not see much percentage change; those which damaged less than 20 square metres increased by 4% whilst the number of fires damaging 21 to 200 square metres fell by 1% and the number damaging more than 200 squares saw no percentage change.

**Table 11: Number and percentage of grassland woodland and crop fires by area damaged**

|                 | Number       |              |              |              |              | Percentage |            |            |            |            |
|-----------------|--------------|--------------|--------------|--------------|--------------|------------|------------|------------|------------|------------|
|                 | 2016-17      | 2017-18      | 2018-19      | 2019-20(r)   | 2020-21(p)   | 2016-17    | 2017-18    | 2018-19    | 2019-20    | 2020-21    |
| Primary fires   |              |              |              |              |              |            |            |            |            |            |
| 0-20 sq m       | 40           | 40           | 93           | 59           | 89           | 56         | 59         | 37         | 53         | 49         |
| 21-200 sq m     | 9            | 9            | 50           | 19           | 29           | 13         | 13         | 20         | 17         | 16         |
| 201+ sq m       | 22           | 19           | 110          | 34           | 63           | 31         | 28         | 43         | 30         | 35         |
| <b>Total</b>    | <b>71</b>    | <b>68</b>    | <b>253</b>   | <b>112</b>   | <b>181</b>   | <b>100</b> | <b>100</b> | <b>100</b> | <b>100</b> | <b>100</b> |
| Secondary fires |              |              |              |              |              |            |            |            |            |            |
| 0-20 sq m       | 1,026        | 1,139        | 2,119        | 1,190        | 1,209        | 62         | 56         | 56         | 57         | 59         |
| 21-200 sq m     | 374          | 532          | 1,021        | 480          | 467          | 23         | 26         | 27         | 23         | 23         |
| 201+ sq m       | 245          | 353          | 621          | 406          | 375          | 15         | 17         | 17         | 20         | 18         |
| <b>Total</b>    | <b>1,645</b> | <b>2,024</b> | <b>3,761</b> | <b>2,076</b> | <b>2,051</b> | <b>100</b> | <b>100</b> | <b>100</b> | <b>100</b> | <b>100</b> |
| All fires       |              |              |              |              |              |            |            |            |            |            |
| 0-20 sq m       | 1,066        | 1,179        | 2,212        | 1,249        | 1,298        | 62         | 56         | 55         | 57         | 58         |
| 21-200 sq m     | 383          | 541          | 1,071        | 499          | 496          | 22         | 26         | 27         | 23         | 22         |
| 201+ sq m       | 267          | 372          | 731          | 440          | 438          | 16         | 18         | 18         | 20         | 20         |
| <b>Total</b>    | <b>1,716</b> | <b>2,092</b> | <b>4,014</b> | <b>2,188</b> | <b>2,232</b> | <b>100</b> | <b>100</b> | <b>100</b> | <b>100</b> | <b>100</b> |

(r) Revised data.

(p) Provisional data

In 2020-21, 49 grassland, woodland and crop fires took place on National Park land; 82% of these were secondary fires. Over the last 10 years there have been 767 grassland, woodland and crop fires on National Park land, equating to 3% of all grassland, woodland and crop fires. 92% of these fires (since 2011-12) were secondary fires.

In 23% of primary grassland, woodland and crop fires in 2020-21, strong winds were a rapid growth factor. Comparative data for secondary fires is not available. Since 2011-12, around two fifths of primary fires where strong winds were a factor damaged over 10,000 square metres.

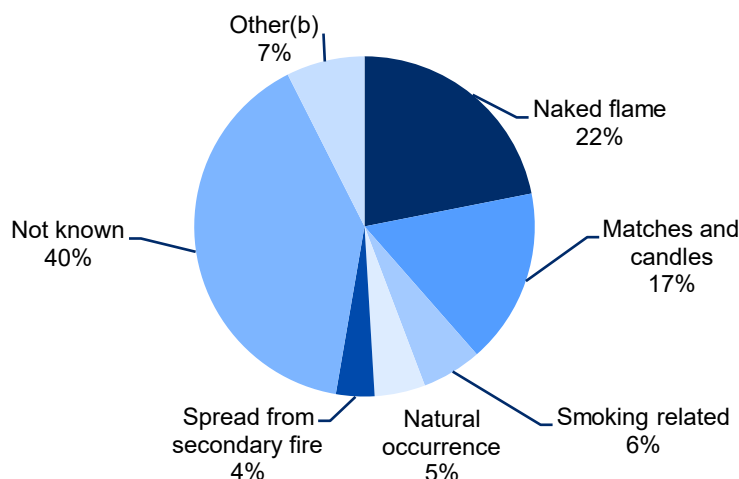
## Section 4: Source of ignition and cause of grassland, woodland and crop fires

Information is available on the source of primary fires, but not secondary fires. Chart 14 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 15), careless handling, overheating or natural causes (which are classed as accidental causes).

In 22% of the primary grassland fires over the last 5 years the source of ignition was a naked flame and a further 17% were due to matches and candles. In 40% of primary grassland fires in the last 5 years, the source was unknown.

In 2020-21 numbers of grassland primary fires caused by naked flames increased by 64%, those caused by matches and candles increased by 76% and those where the source was unknown rose by 71%.

**Chart 14: Percentage of primary grassland, woodland and crop fires, 2016-17 to 2020-21, by source of ignition(a)**



(a) Accidental and deliberate grassland fires.

(b) Includes Bombs and explosives, Fireworks, Fuel/Chemical, Other, Wet hay, Cooking appliance, Vehicles and Other domestic style appliance.

**Deliberate primary fires:** As may be expected, for most deliberate fires over the last 5 years the source of ignition was a naked flame (28%) or matches and candles (22%). A further 6% were started with smokers' materials. In 40% of deliberate fires the source was unknown.

**Accidental primary fires:** The sources of accidental fires are more varied; 15% occurred naturally, 11% spread from secondary fires and 9% started with a naked flame. In 38% of accidental fires the source was unknown.

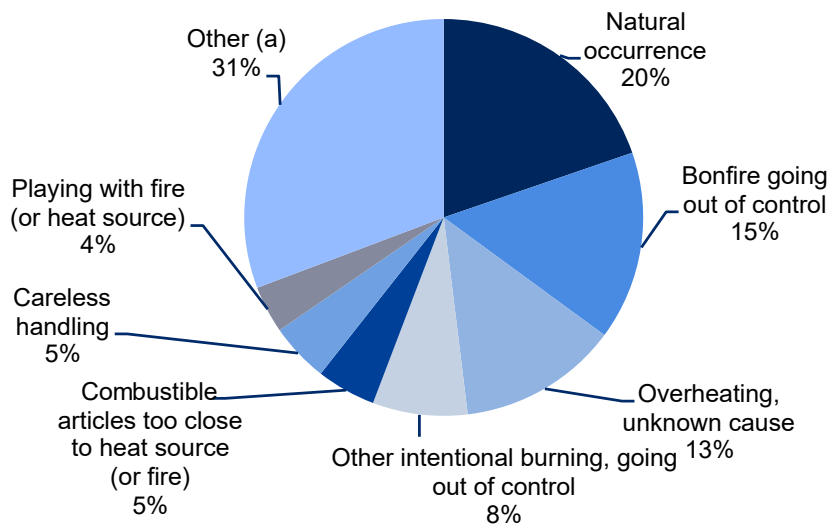
In 2020-21, for 46% of primary fires the source was recorded as unknown, and 65% of these were deliberate fires.



The causes of accidental primary grassland, woodland and crop fires are also varied. In chart 15, 31% of these fires over the last 5 years are shown as having 'other' causes. These 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).

In the last 5 years, 20% of accidental primary grassland, woodland and crop fires were determined to have been caused naturally and 15% were due to bonfires going out of control.

**Chart 15: Percentage of accidental primary grassland, woodland and crop fires, 2016-17 to 2020-21, by main cause**



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

## Section 5: Additional analysis - Calendar year data

This analysis has been included as we are aware that users often refer to data on the situation in the calendar year rather than the financial year, and also to question the impact of the Easter break on the patterns seen.

As has been noted earlier in the bulletin there is regularly a peak in grassland, woodland and crop fires seen in April (beginning of the financial year) and March (end of the financial year), which *may* be linked to the timing of Easter. Analysis of calendar year data can be useful, as this limits periods of Easter in a year to one and also to show the peak period for fires as a continuous time.

Numbers of grassland, woodland and crop fires and fire false alarms rose by 7% in 2020 (compared with 2019); fires saw no percentage change and fire false alarms rose by 25%.

In 2020 the number of primary grassland fires rose by 81% compared with 2019, to the highest number since 2011. Secondary fires fell by 4% compared with 2019.

**Table 12: Numbers of fires and fire false alarms and numbers which are grassland, woodland and crop related – calendar year**

|                                 | 2011   | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   | 2018   | 2019(r) | 2020(p) |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| Primary                         | 5,756  | 4,932  | 4,896  | 4,538  | 4,591  | 4,885  | 4,356  | 4,459  | 4,212   | 3,925   |
| of which grassland(a)           | 243    | 94     | 137    | 76     | 115    | 76     | 77     | 244    | 106     | 192     |
| Secondary                       | 10,549 | 6,769  | 8,276  | 6,344  | 6,958  | 5,905  | 6,467  | 7,616  | 6,278   | 6,080   |
| of which grassland(a)           | 4,927  | 2,515  | 4,081  | 2,449  | 3,067  | 1,923  | 2,133  | 3,494  | 2,173   | 2,085   |
| Total fires(b)                  | 16,941 | 12,394 | 13,919 | 11,408 | 12,036 | 11,199 | 11,235 | 12,433 | 10,844  | 10,321  |
| of which grassland(a)           | 5,170  | 2,609  | 4,218  | 2,525  | 3,182  | 1,999  | 2,210  | 3,738  | 2,279   | 2,277   |
| Fire false alarms               | 15,435 | 15,805 | 15,433 | 15,392 | 14,351 | 15,161 | 14,077 | 14,485 | 14,243  | 14,766  |
| of which grassland(a)           | 1,427  | 1,066  | 1,152  | 1,030  | 1,090  | 900    | 851    | 1,057  | 852     | 1,069   |
| All fires and fire false alarms | 32,376 | 28,199 | 26,841 | 29,311 | 26,387 | 26,360 | 25,312 | 26,918 | 25,087  | 25,087  |
| of which grassland(a)           | 6,597  | 3,675  | 5,370  | 3,555  | 4,272  | 2,899  | 3,061  | 4,795  | 3,131   | 3,346   |

(a) Grassland, woodland and crops

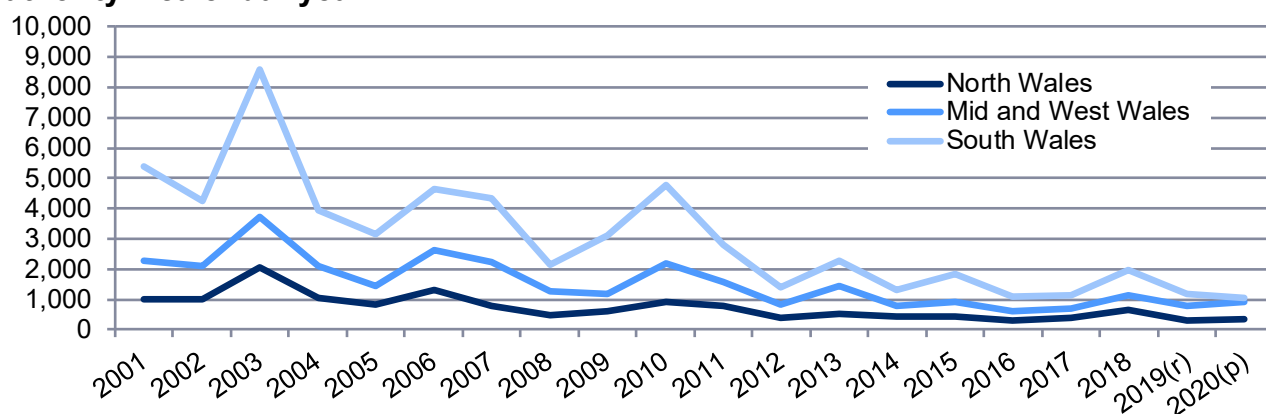
(b) Includes chimney fires

(r) Revised data.

(p) Provisional data.

Chart 16 shows all 3 FRAs have seen a general downward trend since 2001, with numbers of grassland woodland and crop fires falling by 81% in South Wales, 68% in North Wales and 59% in Mid and West Wales. Compared with 2019 only South Wales saw a decrease (14%) whilst Mid and West Wales and North Wales both saw increases, of 19% and 7% respectively.

**Chart 16: Numbers of grassland, woodland and crop fires by fire and rescue authority – calendar year**



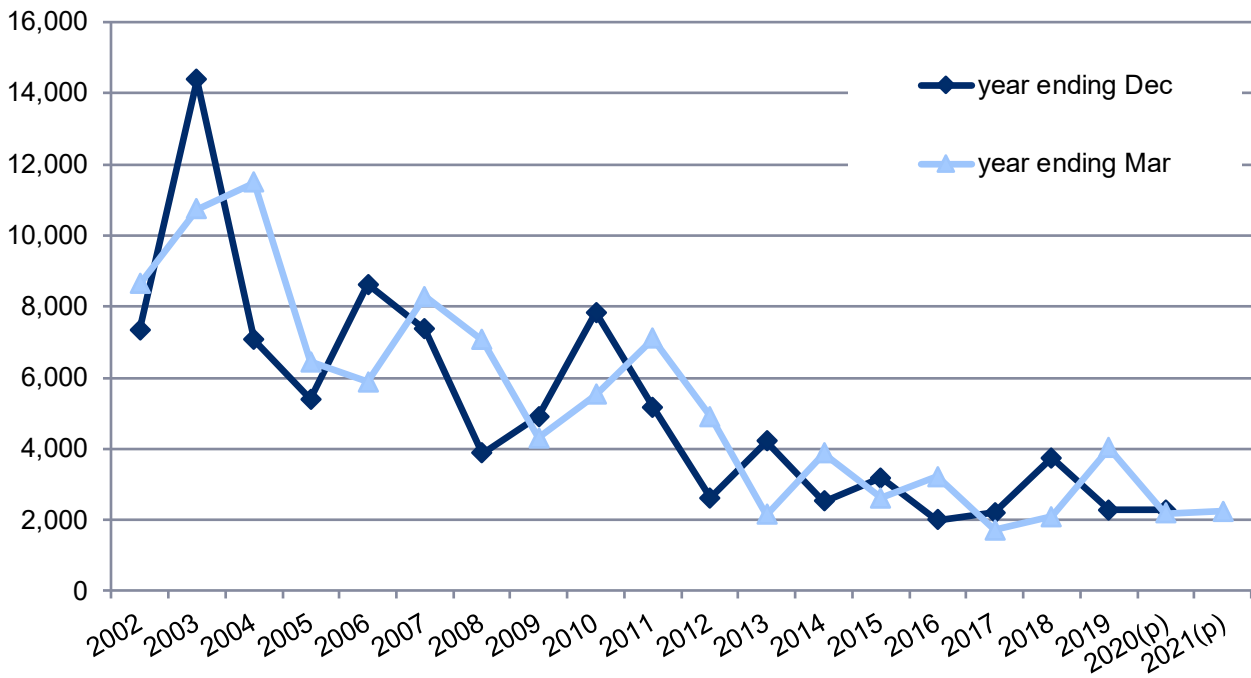
(p) Provisional data

(r) Revised data

## Comparisons between calendar year and financial year

A comparison between calendar years and financial years as shown in Chart 17 shows similar patterns with peaks and troughs displaced by 3 months (i.e. a peak seen in calendar year 2003 will be seen in financial year 2003-04). This is intuitively true since calendar years and financial years have 9 months in common (e.g. calendar year 2003 shares 9 months with financial year 2003-04).

**Chart 17: Grassland, woodland and crop fires - comparing calendar year data with financial year**



(p) Data for financial year 2020-21 and calendar year 2020 are provisional.

## Easter holidays

Table 13 shows the numbers, percentages and daily rates of grassland, woodland and crop fires occurring around Easter each year.

The Easter period in 2020 occurred wholly within the April 2020, and therefore falls entirely within 2020-21. Easter in 2021 fell partly in March 2021 and partly in April 2021. The Easter days occurring in March 2021 are included in the analysis below. Financial year 2020-21 therefore has 21 days of Easter (16 in 2020 and 5 in 2021).

The numbers of grassland fires in this Easter period decreased for both financial and calendar years. The percentage of grassland fires occurring during Easter dropped from less than 23% in the financial year 2019-20 to 21% in 2020-21. Similarly in the calendar year the proportion at Easter went from 22% in 2019 to 18% in 2020.

The table also makes a comparison with the daily rate for the year and the daily rate for the combined months of April and March (usually numbers of fires are high in these two months and span the Easter period). In 2020-21 the daily rate of fires at Easter (21 days in total) was higher at Easter than the daily rate in March 2021 and April 2020 combined and the annual daily rate.

For the calendar year 2020 the daily rate at Easter 2020 was higher than the daily rate in March 2020 and April 2020 combined and the annual daily rate.

**Table 13: Analysis of grassland, woodland and crop fires at Easter (a)**

|         | Year Ending March |           |                                |            |                   |           | Year ending December |           |                                |            |                  |           |
|---------|-------------------|-----------|--------------------------------|------------|-------------------|-----------|----------------------|-----------|--------------------------------|------------|------------------|-----------|
|         | Days of Easter    | Fires (b) | % of fires occurring at Easter | Daily rate |                   |           | Days of Easter       | Fires (b) | % of fires occurring at Easter | Daily rate |                  |           |
|         |                   |           |                                | at Easter  | April & March (c) | Each year |                      |           |                                | at Easter  | March /April (c) | Each year |
| 2011    | 11                | 467       | 7                              | 42         | 64                | 19        | 16                   | 1,264     | 24                             | 79         | 51               | 14        |
| 2012    | 17                | 1,341     | 27                             | 79         | 46                | 13        | 16                   | 498       | 19                             | 31         | 27               | 7         |
| 2013    | 24                | 658       | 31                             | 27         | 18                | 6         | 16                   | 906       | 21                             | 57         | 30               | 12        |
| 2014    | 7                 | 669       | 17                             | 96         | 27                | 11        | 16                   | 467       | 18                             | 29         | 17               | 7         |
| 2015    | 20                | 482       | 18                             | 24         | 16                | 7         | 16                   | 551       | 17                             | 34         | 32               | 9         |
| 2016    | 19                | 565       | 18                             | 30         | 33                | 9         | 17                   | 94        | 5                              | 6          | 15               | 5         |
| 2017    | 10                | 65        | 4                              | 7          | 11                | 5         | 16                   | 550       | 25                             | 34         | 18               | 6         |
| 2018    | 24                | 579       | 28                             | 24         | 14                | 6         | 16                   | 48        | 1                              | 3          | 4                | 10        |
| 2019    | 8                 | 19        | 0                              | 2          | 8                 | 11        | 16                   | 510       | 22                             | 32         | 16               | 6         |
| 2020(p) | 16                | 510       | 23                             | 32         | 17                | 6         | 16                   | 416       | 18                             | 26         | 18               | 6         |
| 2021(p) | 21                | 473       | 21                             | 23         | 17                | 6         | 16                   | ~         | ~                              | ~          | ~                | ~         |

(a) For the purposes of this table, Easter is defined as the 16 day period starting on the Saturday before Good Friday and ending on the Sunday after Easter Monday. For most years this period matches the Easter school holidays. See Key Quality Information for dates.

(b) Grassland, woodland and crop fires.

(c) In the financial year April is at the beginning of the period whilst March is at the end (e.g. April 2017 and March 2018 in 2017-18) whilst in the calendar year March and April are consecutive months.

(p) Data for financial year 2019-20 and calendar year 2019 are provisional.

~ Data not available yet

## Glossary

**Accidental** fires include those where the fire was ignited by accident or 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. Data on chimney fires do not fall within the scope of this bulletin.

**Deliberate** fires include those where deliberate ignition is merely suspected.

**Fire False Alarms** are events in which the Fire and Rescue Authority was called to a reported fire which turned out not to exist. This bulletin does not include data on Special Service Incident False Alarms. False alarms are categorised as follows:

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

**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** (fire related) 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 becomes apparent 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

The analysis in this bulletin relates to fire and rescue service incidents between April 2020 and end March 2021 and therefore covers a period largely affected by 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 (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 700,000 across a geographical area of 2,400 square miles. It employs over 850 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 almost 1,800 staff including over 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 \(Wales\) 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 more details of the information collected and held on IRS please see 'Further details' on page 36.

The incident data are extracted from IRS annually (usually around June/July) and marked provisional at first publication. All bulletins and StatsWales tables excluding the quarterly data usually published in 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.

The table below compares the provisional 2019-20 data which was published in November 2020 (and in Grassland, woodland and crop fires 2019-20 in February 2021) with the revised data (extracted in August 2021) as published in this bulletin. No revision was necessary to the total number of primary fires, whilst the secondary fires were slightly revised.

### Comparison of provisional data with revised data (2019-20)

|  | Provisional 2019-20<br>Published in<br>November 2020 | Revised 2019-20<br>Published in<br>September 2021 | Percentage<br>change |
|--|--|---|----------------------|
| Primary grassland, woodland and crop fires   | 112  | 112   | 0.0                  |
| Secondary grassland, woodland and crop fires | 2,077  | 2,076   | 0.0                  |



In earlier releases we have included a table showing a time series of the year on year revisions. . The table tends to show that the extent of revisions has been much lower in recent years.

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. These grid references submitted by the FRAs are used to determine the local authority in which the incident occurred.

## **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**

This Statistical Bulletin is pre-announced and then published on the [Statistics & Research website](#).

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 usually extracted in July each year. This bulletin is usually published in the October around 7 months after the year end.

## 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.

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 the Department for Communities and Local Government 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 2019-20 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.

## 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 can impact on the financial year in which the school holidays may fall. For the purpose of this bulletin 'Easter' is taken from the Saturday before Good Friday to the Sunday after Easter Monday. School closures due to the Covid pandemic have also been noted.

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

- 2021 – Monday 29<sup>th</sup> March to Friday 9<sup>th</sup> April. Fires occurring between Saturday 27<sup>th</sup> March and Wednesday 31<sup>st</sup> March (inclusive) are included in the analysis of fires at Easter in 2020-21. Following further school closures in January 2021 a phased reopening of schools began on 22<sup>nd</sup> February 2021 with all remaining pupils returning to learning on site by 12<sup>th</sup> April 2021.  
Good Friday 2<sup>nd</sup> April Easter Monday 5<sup>th</sup> April
- 2020 – Monday 6<sup>th</sup> April to Friday 17<sup>th</sup> April, the whole period falling within the financial year 2020-21. It should be noted that all schools across Wales closed on 20 March 2020, with the exception of provision for vulnerable children and children of critical workers. They did not reopen until 29<sup>th</sup> June 2020.

Good Friday 10<sup>th</sup> April, Easter Monday 13<sup>th</sup> April.

- 2019 – Monday 15<sup>th</sup> April to Friday 26<sup>th</sup> April, the whole period falling within the financial year 2019-20. Some schools may have scheduled an inset day to occur before or after this holiday period.

Good Friday 19<sup>th</sup> April, Easter Monday 22<sup>nd</sup> April.

- 2018 – Local Authorities were grouped as per the linked [Minister's statement](#) with 16 LAs in Group A (Easter holiday Friday 30<sup>th</sup> March – Friday 13<sup>th</sup> April 2018) and the remaining 6 in Group B (Easter holidays Monday 26<sup>th</sup> March - Friday 6<sup>th</sup> April 2018)

Good Friday 30<sup>th</sup> March, Easter Monday 2<sup>nd</sup> April.

- 2017 - Monday 10<sup>th</sup> April to Friday 21<sup>st</sup> April, the whole period falling within the financial year 2017-18. Good Friday 14<sup>th</sup> April, Easter Monday 17<sup>th</sup> April.
- 2016 - Friday 25<sup>th</sup> March to Friday 8<sup>th</sup> April. The first week of the school holidays falls within 2015-16; the remainder of the holiday falls within 2016-17. Good Friday 25<sup>th</sup> March, Easter Monday 28<sup>th</sup> March.
- 2015 - Monday 30<sup>th</sup> March to Friday 10<sup>th</sup> April. Only the 30<sup>th</sup> and 31<sup>st</sup> March fall in the financial year 2014-15, the remainder of the holiday falls within 2015-16. Good Friday 3<sup>rd</sup> April, Easter Monday 6<sup>th</sup> 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 18<sup>th</sup> April, Easter Monday 21<sup>st</sup> April. School holidays would have fallen wholly in financial year 2014-15.
- 2013 – Good Friday 29<sup>th</sup> March, Easter Monday 1<sup>st</sup> 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)

[Data for 2014-15 onwards](#)

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

Limited Northern Ireland data are available in an annual report from [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 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

The document is available on our website: <https://gov.wales/grassland-fires>

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 '[Fire and Rescue Incident Statistics, 2020-21](#)':

The bulletin includes charts and information on fires, false alarms and Special Service Incidents, on all location types (dwellings, road vehicles etc.), causes of fires and the presence of smoke alarms.

The [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

Grassland fires 2021-22 to be published in October 2022.

## 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](mailto:stats.inclusion@gov.wales)

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