

Greenham and Crookham Common Grazing Report - 2020

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Summary

This report summarises the findings of the grazing monitoring carried out on the Commons in 2020. It also looks at a selection of comparable data from 2016 onwards to highlight trends. The results are set into context using the agreed sward height, flower cover, heather sward, and cattle number limits. Management and monitoring recommendations are made.

The data shows that sward height remains taller and the flowers more abundant inside the enclosures and thus for the vast majority of samples the grassland limits are not met. A similarly high proportion of heather samples are also failing their limits. Numbers of cattle on site can be seen to be reducing and within their limits during the summer months, but still regularly exceeding limits during the winter and spring.

In conclusion the data currently shows that Greenham Common and Crookham Commons are overgrazed.

Recommendations

1. Give the Commons a meaningful break from winter and spring grazing, as per the current recommended stocking densities
2. Continue the annual grassland and heathland monitoring to assess the grazing impacts in relation to the proposed stocking densities

1. Introduction

This report follows on from the “Striking the Balance” reports, 2017, 2018, and 2019.

Greenham and Crookham Commons (hereafter ‘the Commons’ for convenience) are an important site both for their contribution to local and national biodiversity, and as a cultural landscape, supporting the exercising of traditional commoners’ rights, especially grazing rights, and as a significant site in the history of the Cold War.

It is well understood that grazing by livestock is an essential tool in the conservation management of lowland heath and grassland habitats, such as those present on the Commons. Grazing affects the structure and species composition of the habitats, by disrupting ecological succession. From an ecological point of view these effects can be both beneficial and detrimental, depending on the levels and timing of grazing.

Over the last 10 years there has been much discussion as to whether the right balance has been struck between the needs and rights of the graziers, and the nature conservation value of the Commons. In 2016, following a request from the Greenham and Crookham Commons Commission (GCCC) to attempt to clarify this issue, a monitoring strategy was developed by the Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT) to assess the ecological impacts of the annual levels of grazing.

In 2016 the Conservation Management Committee (a committee of the GCCC) agreed the conservation objectives outlined in a newly revised management plan for the Commons. The objectives in this plan were used as the targets for assessing the level of grazing, from a conservation point of view.

The grazing impact monitoring uses two strands of evidence – one based on grassland impacts, and a second based on impacts on heather development. Specific details of the methodology and rationale of the grazing impact monitoring have not been provided in this document as they are available in the previous editions of this report (e.g. May 2019), or from BBOWT.

This report outlines the key findings based on the results from the grazing impact monitoring, carried out annually between 2016 and 2020 inclusive. Other data, in particular the number of cattle, is also assessed. Finally, management and monitoring recommendations are made.

2. Survey Results

2.1 Impact on grassland areas during 2020

Note: There is no data for April as the national lockdown prevented non-essential work being carried out.

Figure 1, relating to mean sward height, shows a pattern consistent with previous years' surveys, namely an increase in sward height through the early part of the growing season, followed by a decline as grass and herb growth slows, post-flowering. It also shows consistency with previous surveys in that the mean sward height is greater inside the grazing enclosures, where cattle cannot reach, but other grazers, like rabbits, can.

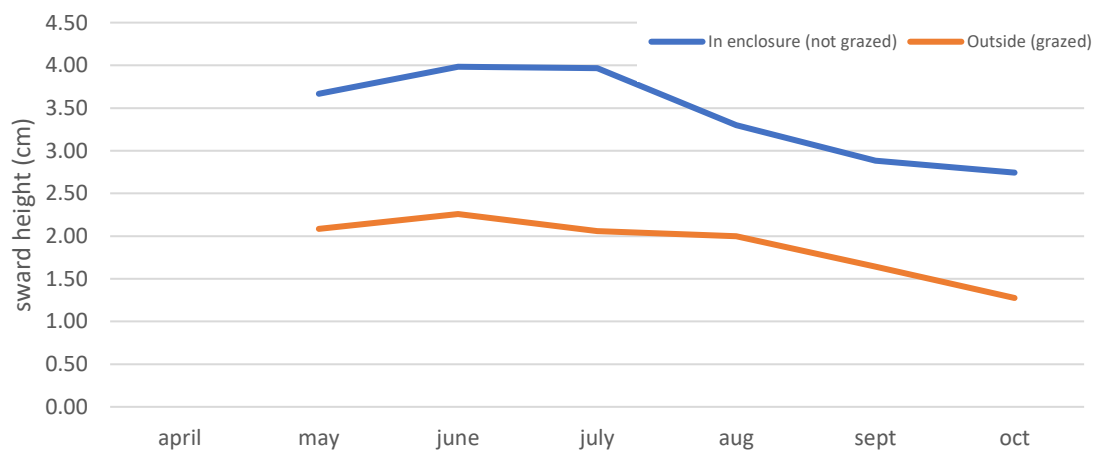


Fig 1 Mean sward height (cm), 2020 growing season

The maximum mean sward height in the exclosures was lower than previous years 4cm in June 2020 compared to a mean of 13 in 2016 – this indicates how poor the early part of the growing season was, due to lack of rain in April and May.

Figure 2 shows the mean number of herbs in flower as a percentage of the total cover of herbs present. Unusually compared to previous years' surveys, the highest percentage of flowering is in the spring and drops back whereas typically the peak flowering time has been June or July. It is very likely that dry weather is responsible (as discussed, and see below). The graph does, however, show a typical pattern of greater flowering in the exclosures compared to the grazing unit in spring; and with that difference shrinking as the summer advances.

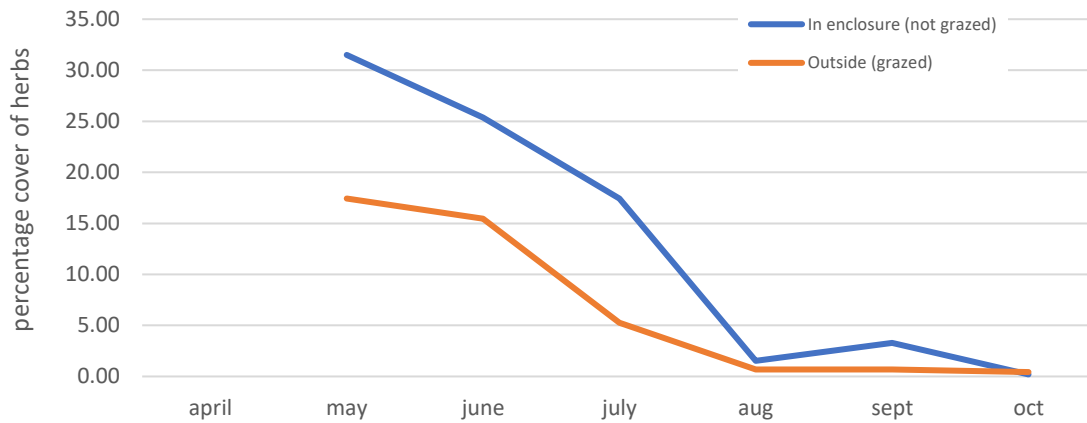


Fig 2 Mean cover of flowering herbs (%), 2020 growing season

Table 1 shows the percentage of samples in the grazing unit (i.e. outside the enclosures) that failed to reach the limits set for declaring that sample as not over-grazed. For most of the spring the definition of failure for sward height is if the sample is less than 50% of the mean value in the enclosure in that month, and for flowering less than 30% of the mean in the enclosure. The limits are adjusted as the season progresses, and for a full description of the limits see the Grazing Limits document.

Table 1: Percentage of samples outside enclosure that failed to reach limits

Month	% of Samples Outside Limits - Sward	% of Samples Outside Limits - Flowers	% of Samples Outside Limits - TOTAL
April	100%		100%
May	93%	83%	100%
June	83%	73%	90%
July	83%	100%	100%
August	97%	100%	100%
September	73%	100%	100%
October	83%		83%

This shows a very high rate of failure of samples on both of the measures, and overall a sample is considered overgrazed if it fails either measure, so the overall failure rate is even higher.

NB. Flowering limits are not set in April or October.

2.2 Annual Trends

To assess the annual trends of the five years of data collection, it is helpful to use an indicator month's data to represent the year. June has been selected as the representative month because there is consistent annual data available, and it is also the peak time for

flowering and grass productivity. In the months following June, perennials start to return their energy stores to their root systems ready for the following growing season.

Figure 3 shows the mean annual sward height in June, and it clearly shows a drop in the mean sward height in both grazed and un-grazed areas of the Common since 2016, with the largest decrease in the exclosures. It is likely that this is related to annual weather patterns, with the last few springs, and especially 2019 and 2020 being very warm and dry.

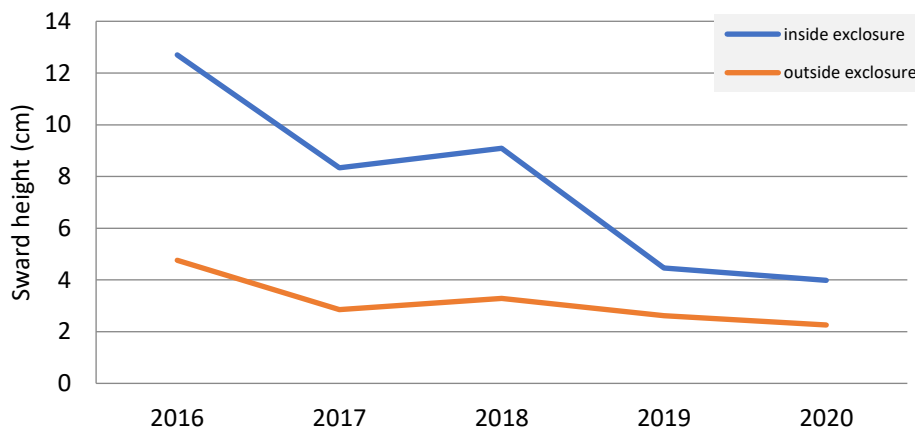


Fig 3: Mean June sward height (cm)

The lines suggest that when growth is potentially lush, 2016 2017 and 2018, the impact on the sward height in the grazed area is proportionately greater, with the grazed sward kept well below its potential height. When growing conditions are less good, the sward gets closer to its potential, but is still cropped very low to the ground. This could well have an impact on the levels of nutrition the cattle are able to extract from the Commons.

Figure 4 shows the mean percentage of flowering herbs in June. The data for flowering does not follow the same clear trend as the sward height graph, with more variation over the

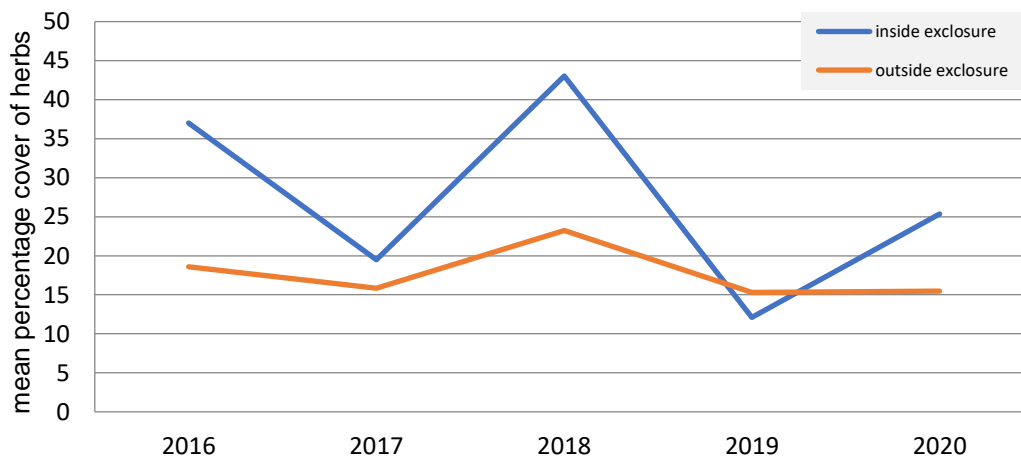


Fig 4 Mean cover of flowering herbs (%)

5 years. Grazing is likely responsible for the large difference in flowering in 2016 and 2018, but in 2017 and 2019 there is very little difference and in 2019 the flowering in the grazed area is greater. Climate may well be playing its part but the relationship between flowering and grazing is not clear.

Figure 5 shows the percentage of June samples failing to reach the limits each year from 2016. The lines show the very high numbers of samples failing - the current threshold is set at 25%, anything over this and the entire Common is assessed as overgrazed. The proportion of samples failing the sward height criteria sharply declined between 2017 and 2019, which was attributed to a dry spring lowering the potential for sward growth. However in 2020 this has increased again and as noted earlier, 2020 was also a dry spring. There is no clear trend of improvement in flowering of herbs.

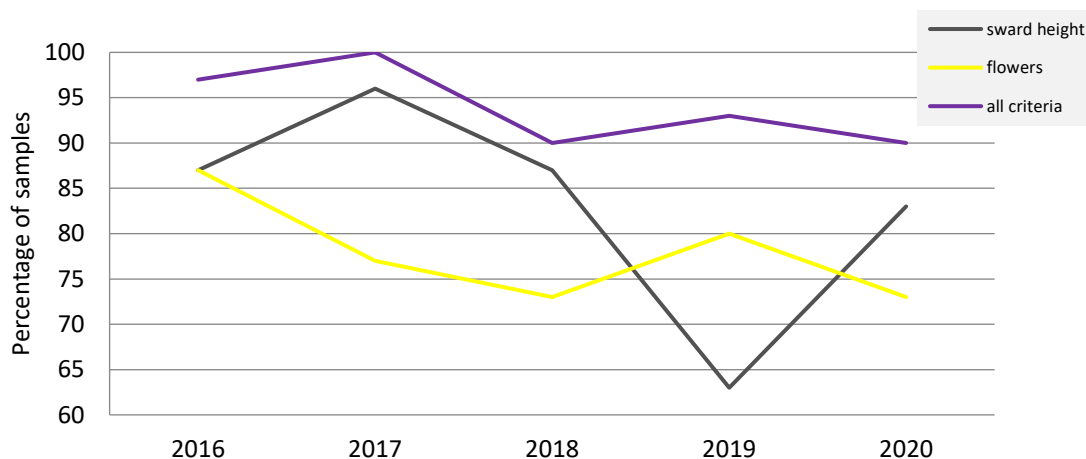


Fig 5. Percentage of samples failing limits in June

Table 2 is a complete breakdown of the percentage of samples failing one or other of the criteria, for each month that data collection has been carried out since 2016, and it clearly shows the continuing high percentages of samples that are classed as overgrazed, using the agreed methodology.

Table 2: Percentage of samples failing limits

Year	April	May	June	July	August	September	October	Average
2016	n/a	93%	97%	97%	93%	100%	n/a	96%
2017	n/a	100%	100%	100%	97%	100%	n/a	99%
2018	n/a	90%	90%	n/a	100%	90%	60%	92%
2019	n/a	97%	93%	70%	100%	93%	90%	90%
2020	n/a	100%	90%	100%	100%	100%	83%	95%

2.3 Impacts on Heather growth

Each autumn since 2016, heather has been sampled across the grazing unit to look at sward height, the presence of stem damage or breaks, and growth forms indicating high levels of grazing. Account is taken of mechanical heather management and these areas not recorded to make sure the impact of grazing is isolated.

Figure 6 shows the total number of samples failing to meet the limits required for a sample to not be considered as overgrazed, and as with the grass sward survey the overall numbers of samples failing has remained consistently high. There is a small but steady increase in the proportion of heather samples assessed as being 'over grazed'.

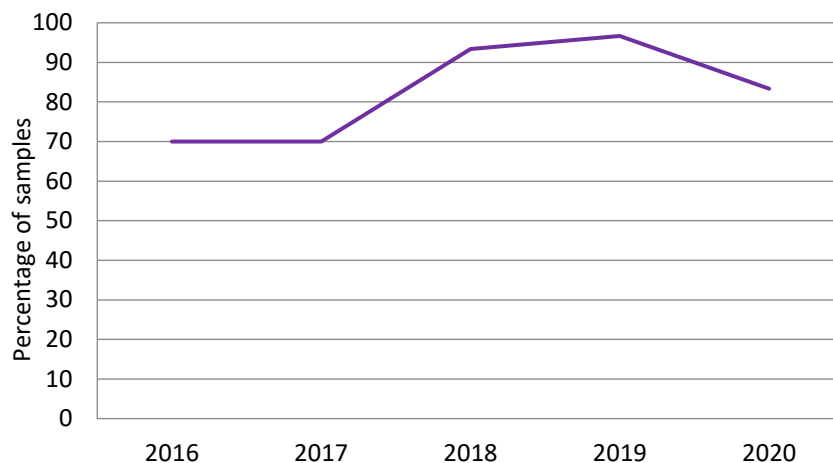


Fig 6. Total percentage of samples failing to reach limits

Table 3 shows the breakdown of the percentages that failed each of the 3 categories each year, and this shows that the rise in the overall number of samples and being classed as overgrazed from 2016 to 2019 was driven by an increase in damaged heather and poor growth forms, rather than sward height. The breakdown also shows that 2020 showed improvements in each category despite the overall total of overgrazed samples remaining high.

Table 3: Percentage of samples which failed in each heather category

year	% of samples failing sward height	% of samples failing broken heather	% of samples failing growth form	Total % of samples failing
2016	30	37	53	70
2017	7	70	7	70
2018	83	57	87	93
2019	67	80	87	97
2020	43	57	70	83

It is probable that these trends reflect the high number of cattle still on the site over winter (see stocking density, below), as this is the time of year that livestock browse more on heather and woody material, as there is very little alternative forage available.

It is worth noting that as a slow growing woody species, the heather samples will reflect the grazing pressure received a year or so previous to one the in which the survey has taken place.

2.4 Impacts on other species

Previous reports assessed ground-nesting bird data, and particularly skylark breeding territories, to indicate the impact on species that is directly affected by grazing pressure. During 2020 however, no survey work was possible in the breeding season. due to lockdown. This work is re-planned for the 2021 season.

2.5 Cattle numbers

Under instruction from the GCCC, the number of cattle (and ponies) present on the Common has been recorded monthly since October 2013, providing a good data-set. The maximum cattle numbers at any point in the calendar year are shown in figure 7.

Ponies have been excluded from this analysis because from 2015 onwards they have never numbered greater than 4, and as such are not considered to be significantly contributing to the grazing pressure (prior to 2015 pony numbers were between 8 and 10). Figure 7 shows that the maximum number of cattle on site at any given time has been decreasing since 20018.

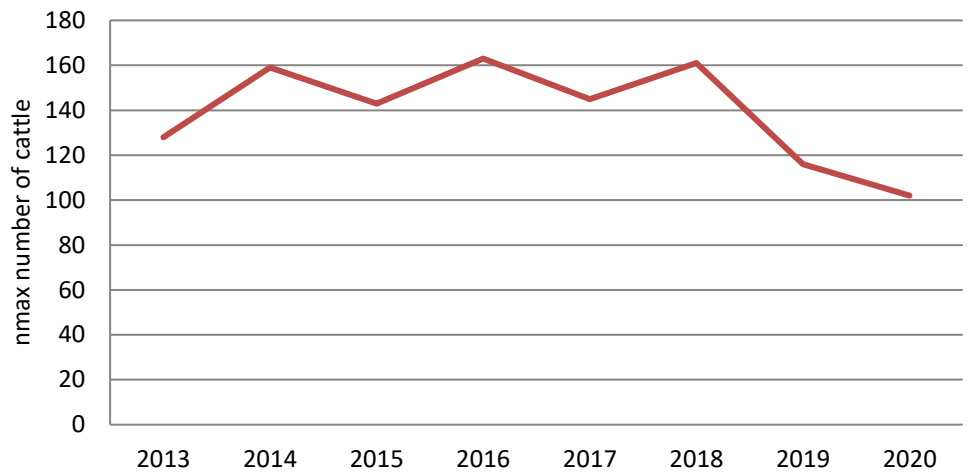


Fig 7: Maximum number of cattle on the common at any one point

Although the total number of cattle present on the Commons has been decreasing since 2018, cattle grazing pressure is not even through the year. Table 4 shows the monthly breakdown of count numbers. In 2016 BBOWT were asked to provide a recommendation for appropriate head of cattle balance grazing with nature conservation objectives. These are detailed in Box 1.(below)

Table 4. Number of cattle per month present on the Common
(grey cells = no data; red cells = limits exceeded)

Month Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
2013/14							118	128		116	117	122
2014/15	138		114	109	151	159	152	131	117	116	120	128
2015/16	130	143	140	114	109	135	127	106	136	120	121	116
2016/17	128	163	114	91	131	126	134	126	8	29	29	55
2017/18	99	98	92	108	100	100	145	137		69	9	
2018/19	9	86	161	102	113	105	112	110	85	27	37	40
2019/20	64	116	73	98	96	99	76	78	74	21		30
2020/21	31	69	68	52	97	96	102	82	41	38	34	

Looking at the monthly breakdown, it is clear that since the summer of 2017, the numbers of cattle turned out during the summer months have mostly been within the suggested limits appropriate for meeting the conservation objectives, apart from June of 2018. However, during the winter and spring the numbers have been consistently higher than the recommended levels, and it is likely that this is driving the high levels of over-grazed samples obtained in the grassland and heather monitoring surveys. High winter stocking will be adversely affecting heather growth, and high spring grazing is likely to prevent early grass and herb growth and therefore the development of a sward capable of lasting and being productive into the summer. The recommended numbers, suggested in 2016, were designed to allow growth to get ahead in the spring, and for the Commons to get a break in the winter months, the break in the winter also avoids the need to supplementary feed on site. This practice, when it has

Box 1: Suggested cattle numbers

Jan – Apr, No cattle
 May, <50 cattle
 Jun, <100 cattle
 Jul – Dec, <120 cattle

been required for animal welfare reasons, has delivered the dual detriments of localised nutrient enrichment and localised heavy poaching leading to soil damage and habitat degradation.

2.6 Weather observations 2020

The spring of 2020 followed a similar pattern to that of 2019 with a very dry and warm start to the growing season in April and May, this resulted in poor growing conditions and a low, thin and unproductive sward. The weather became wetter in July and August, with a spell of very hot temperatures, this led to a partial recovery of growth rate

3. Conclusions and recommendations

An initial purpose of the monitoring was to feedback into whether the recommended cattle numbers were considered proportionate, and to constantly evaluate the appropriateness of the over-grazing limits. Since the stocking level recommendations have not been met for a whole calendar year since 2016, it is not possible to conclude whether the recommended numbers are suitable for the nature conservation needs of the Commons. Further, the very high numbers of over-grazed samples consistently show that the Commons as a whole are classed as “overgrazed”.

A key recommendation would be to give the Commons a meaningful break from winter and spring grazing.

Natural England have produced a report (Graham Steven, March 2012), based on botanical observations, that voices similar concerns about habitat degradation and damage to the SSSI, triggered by grazing pressure. Its key recommendations echo those of this analysis, namely resting the Commons, and a more sympathetic approach to stocking numbers especially at critical times of year such as winter and spring, or in response to weather effects on forage availability. The report recognizes the logistical difficulties of doing this with commons grazing, factors such as multiple stock ownership, and the availability of layback, but its recommendations are clear - that damage is being done to the SSSI.

Until the agreed numbers of cattle have been experienced at Greenham for a number of growing seasons it will be difficult to assess whether these limits are appropriate to balance the needs of the SSSI and those of the graziers.

It is therefore recommended that the annual grassland and heathland monitoring continue.

Appendix 1: Weather summaries

The following weather summaries have been taken from the Met Office reports – ‘State of the UK Climate Reports, 2014 – 2018’¹. 2020 data is only available as preliminary information and no data can be readily located for 2013.

2014

- Warmest year on record for the UK, England, Wales and Scotland in a series from 1910, and for Central England in a series from 1659.
- Lowest heating degree day index* and second highest growing degree day index* for the UK in series from 1960.
- Fourth wettest year on record for the UK in a series from 1910.
- Marginally sunnier than average for England and Wales, but duller for Scotland.

2015

- 16th warmest year for the UK in a series from 1910, and 25th warmest for Central England in a series from 1659.
- Heating degree days in 2015 were slightly below average but not exceptionally so. Growing degree days were near average.
- Seventh wettest year on record for the UK in a series from 1910
- Sunnier than the 1981-2010 average for the UK overall.

2016

- 2016 was the 13th warmest year for the UK in a series from 1910, and 22nd warmest for Central England in a series from 1659.
- Growing degree days were slightly above average.
- Rainfall was slightly below average for the UK overall with 95% of the 1981-2010 average precipitation.
- Sunnier than the 1981-2010 average for the UK overall with 104% of average sunshine hours.

2017

- Fifth warmest year for the UK in a series from 1910, and eighth warmest for Central England in a series from 1659.
- Heating degree days in 2017 were fifth lowest and growing degree days equal-fifth highest in series from 1960.
- Rainfall for the UK overall was 97% of the 1981–2010 average and 102% of the 1961–1990 average.
- Sunshine for the UK overall was exactly 100% of the 1981–2010 average and 103% of the 1961–1990 average.

2018

- Seventh warmest year for the UK in a series from 1884, and fourth warmest year for Central England in a series from 1659.
- Heating degree days in 2018 were below average and growing degree days were third highest in series from 1960.
- Rainfall for the UK overall was 92% of the 1981–2010 average and 96% of the 1961–1990 average. June 2018 was the driest June for England since 1925.
- Year 2018 sunshine for the UK overall was 114% of the 1981–2010 average and the third sunniest year in a series from 1929.

2019

- 2019 was warmer than average. Temperatures exceeded 30 °C somewhere in the UK on 10 days during the summer. Also noteworthy were the record-breaking warm spells in February and July as noted above, and record-breaking warmth for both the Easter and late-August bank holiday weekends.
- It was also a sunnier than average year.
- It was a rather wet year, with above average rainfall in March and then most months from June onwards. There were a series of heavy-rainfall events in February, March, April and June, and numerous incidences of flooding from the end of July onwards.

¹ <https://www.metoffice.gov.uk/research/climate/maps-and-data/summaries/index>

2020²

- Our region was drier, sunnier and warmer than the 1981-2010 average. February was wet; the spring very warm and dry; July was cool, and wet, August had a brief very hot spell.

* the number of days on which an average household heating system comes on

+ the number of days on which conditions are conducive to plant growth (a constructed model; not based on an actual species)

² https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/weather/learn-about/uk-past-events/summaries/uk_monthly_climate_summary_annual_2020.pdf