

# Extreme heat and outdoor fires in London

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This data analysis has been produced for the [Fire Committee](#) by the London Assembly Research Unit. The Research Unit provides an impartial, specialist research and analysis service to support the work of the Assembly and inform Londoners.

The analysis was initially undertaken to support the Committee's meeting on 11 July 2024, to discuss the [London Fire Brigade's](#) (LFB's) preparedness for dealing with potential fires over the summer period, particularly in light of the experience during the heatwaves of 2022 in London. The LFB is London's fire and rescue service, overseen by the [London Fire Commissioner](#).<sup>1</sup>

The purpose of the analysis was to understand how many outdoor fires the LFB has been required to attend in recent years, where in London these incidents have occurred, and the relationship to the weather in the city, particularly instances of very high temperatures.

## Definitions and available data

There is no single definition of the term 'wildfire'. In the UK, the term is used in the UK context to describe 'any uncontrolled vegetation fire which requires a decision, or action, regarding suppression'.<sup>2</sup> In a global context, the term would describe fires occurring in 'wildland', although this is less relevant to the UK.

The [National Fire Chiefs Council](#) (NFCC), representing all fire and rescue services, defines wildfires as fires that meet one or more of the following criteria:

- Involves a geographical area of at least one hectare (10,000 square metres)
- Has a sustained flame length of more than 1.5 metres
- Requires a committed resource of at least four fire and rescue service appliances/resources
- Requires resources to be committed for at least six hours
- Presents a serious threat to life, environment, property, and infrastructure.<sup>3</sup>

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<sup>1</sup> The London Fire Commissioner is a corporation sole, which is a functional body of the GLA and London's fire and rescue authority. The Mayor of London appoints the Commissioner, who also serves as London's chief fire officer.

<sup>2</sup> Belcher et al, [UK wildfires and their climate challenges. Expert Led Report Prepared for the third Climate Change Risk Assessment](#), 2021

<sup>3</sup> NFCC, [Wildfire Aware](#), accessed 16 July 2024

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There are difficulties in capturing data on wildfires, based on these definitions. The data used in this analysis is primarily drawn from LFB incident records, published on the London Datastore.<sup>4</sup> This includes information on some of the criteria used by the NFCC, but not all. This data does include information on the location and nature of the fire (that is, what is on fire) and LFB's response.

A strict interpretation of the NFCC definition would almost certainly limit the number of 'wildfires' in London to very small numbers, which is to be expected in a dense urban environment. This analysis, therefore, includes outdoor fires taking place in London that involve vegetation. These are often still very serious incidents that present a threat to Londoners, require a response from LFB and, as the analysis shows, have occurred more frequently when temperatures are higher.

## Methodology

Data on fires was gathered from LFB's incident records, which can be found on the London Datastore. For the purpose of this analysis, the data was filtered along the following lines:

- Incident: Fire
- Property Category: Outdoor
- Property Type: beach, canal/riverbank vegetation, cemetery, golf course, grassland/pasture/grazing etc, heathland, hedge, lake/pond/reservoir, park, playground/recreation area (not equipment), railway trackside vegetation, roadside vegetation, scrub land, tree scrub, wasteland, woodland/forest broadleaf/hardwood, woodland/forest conifers/softwood.

The visualisations refer to the fires captured by these filters as "outdoor fires" or "incidents".

The aim was to capture fires that occurred in less managed areas, which is why gardens were excluded from this analysis.

For the purpose of this analysis, the meteorological summer is used. This covers the period of 1 June to 31 August.<sup>5</sup> This date range is referred to as the "summer period" in the visualisations.

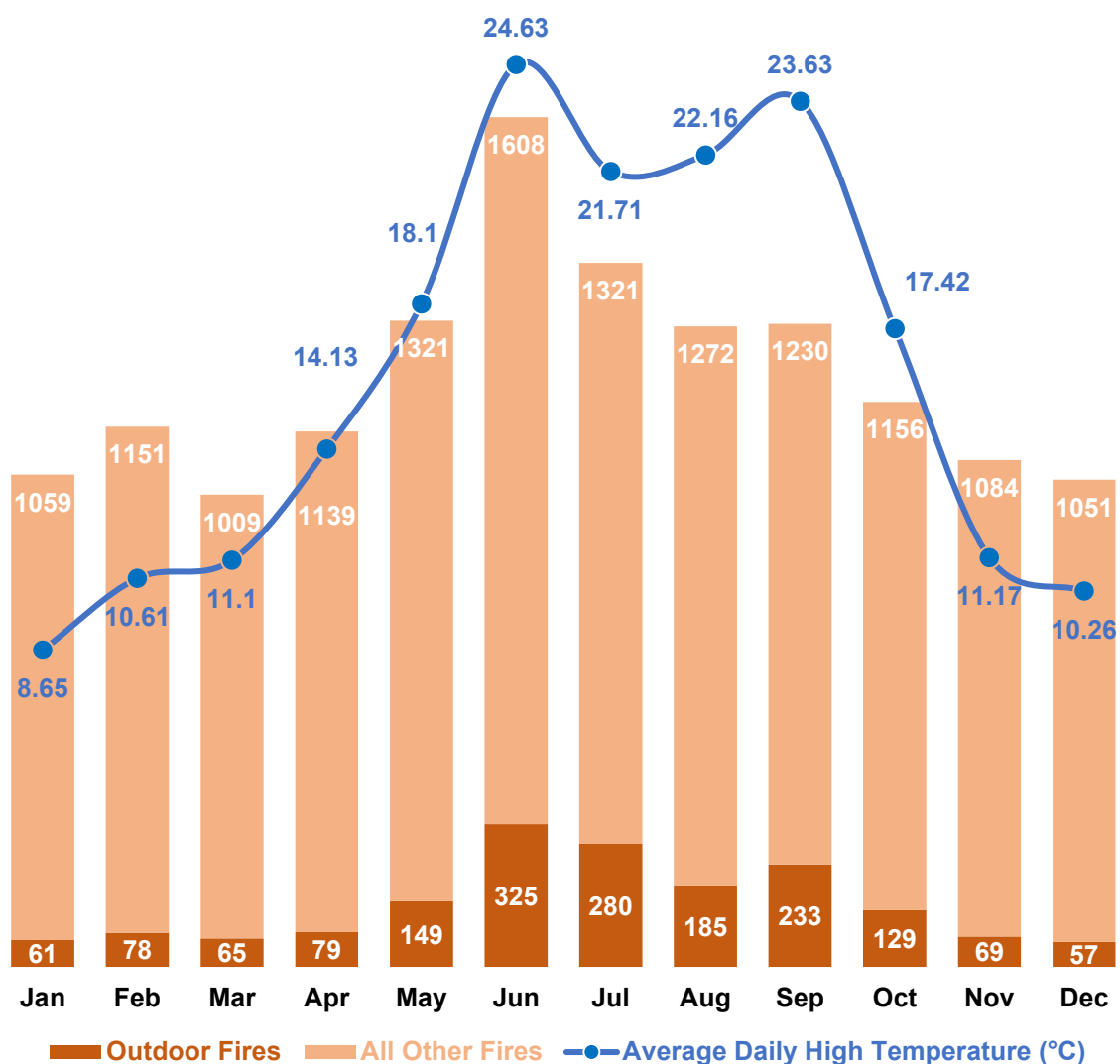
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<sup>4</sup> London Fire Brigade, [LFB Incident Records](#), accessed 16 July 2024

<sup>5</sup> Met Office, [When does summer start?](#), accessed 18 July 2024

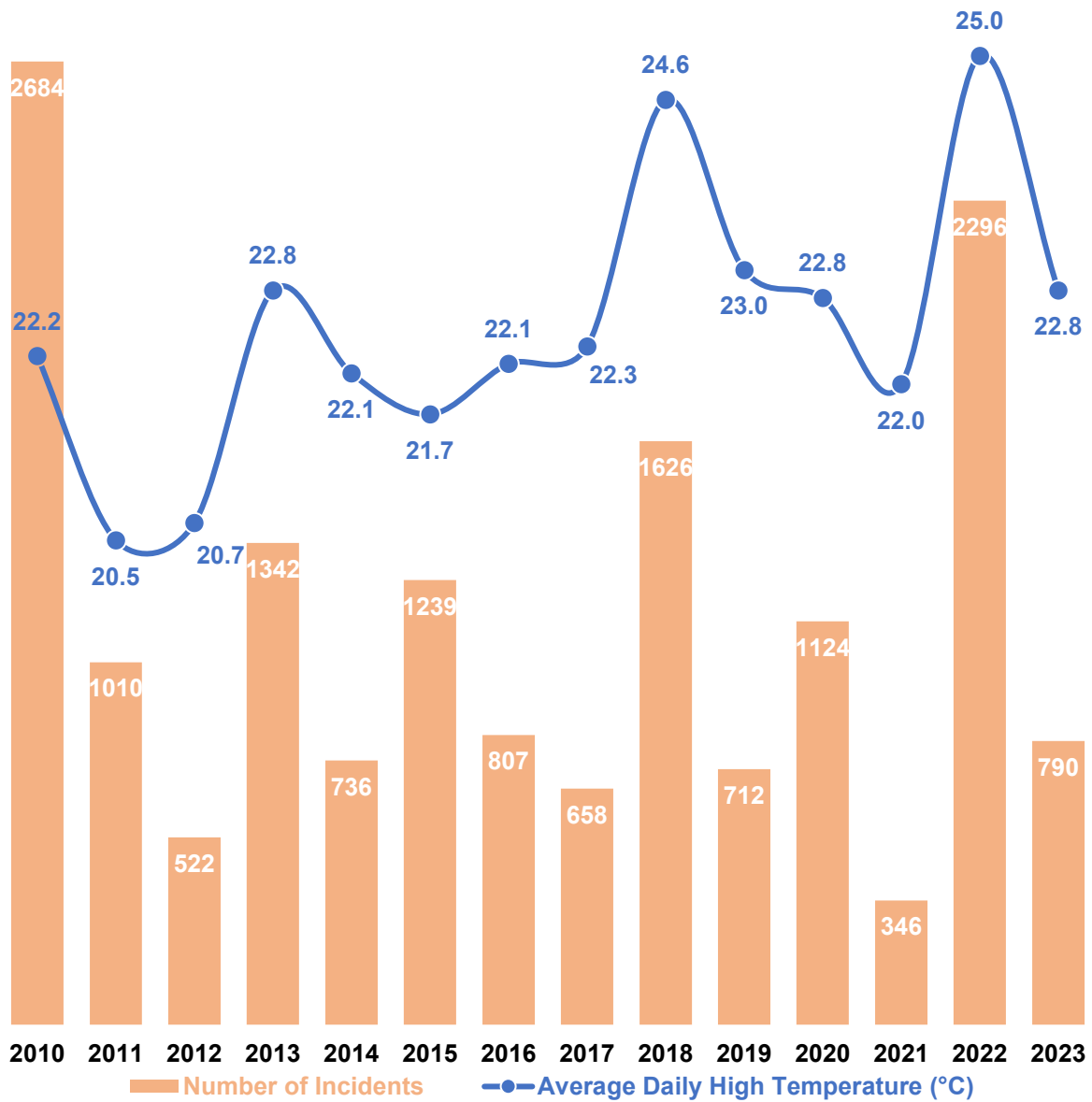
## Temperatures and incident numbers

Figure 1: Monthly fires and average daily high temperatures in London, 2023<sup>6</sup>



<sup>6</sup> London Datastore, [London Fire Brigade Incident Records](#), accessed June 2024 and Timeanddate, [Past Weather in London](#), accessed June 2024

**Figure 2: Summer period outdoor fires and average daily high temperatures in London, 2010-2023<sup>7</sup>**



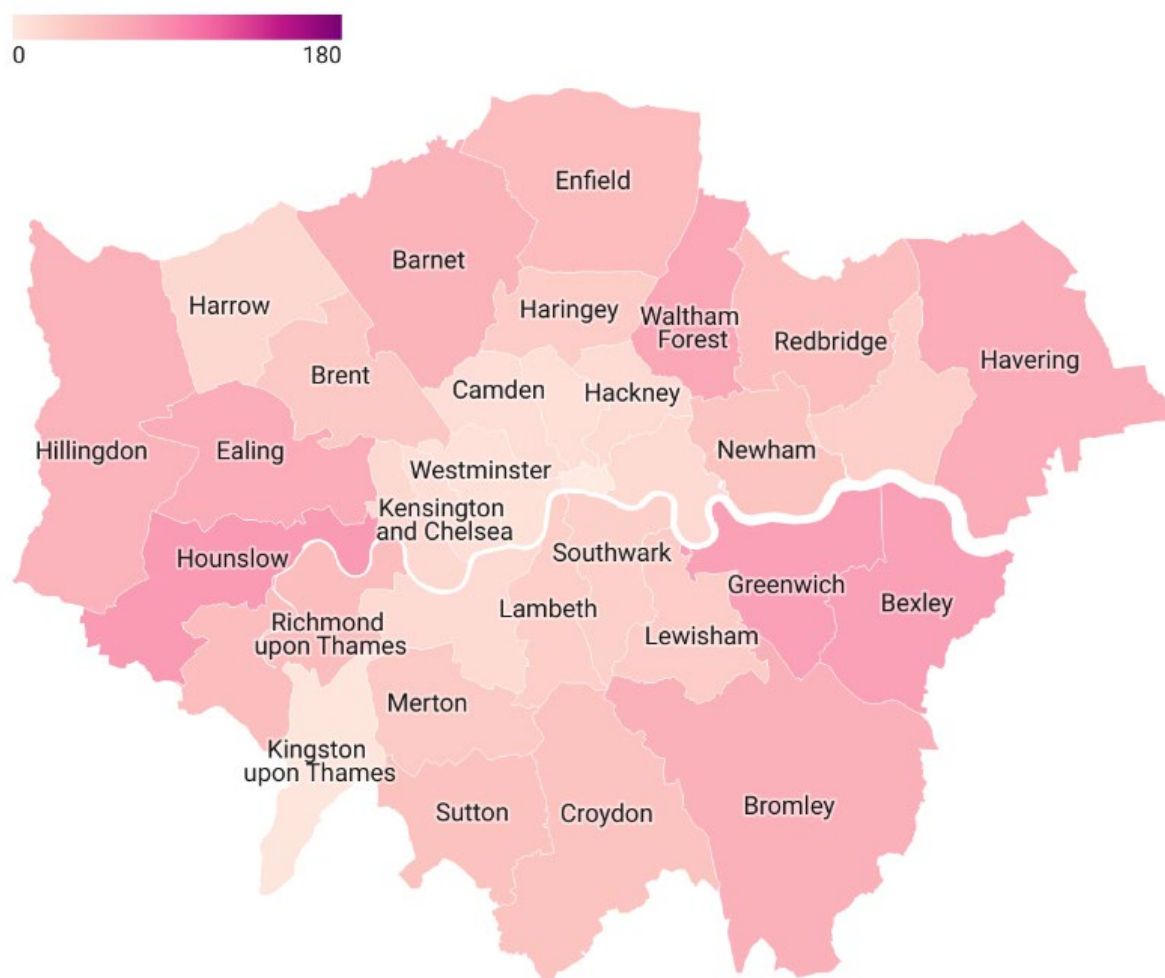
<sup>7</sup> London Datastore, [London Fire Brigade Incident Records](#), accessed June 2024 and Timeanddate, [Past Weather in London](#), accessed June 2024

## Location of incidents: London boroughs

2020

Summer 2020 saw temperatures which were slightly higher than average, especially during June and August. However, June and July were relatively wet months.<sup>8</sup>

**Figure 3: Number of outdoor fire incidents by London borough, summer 2020<sup>9</sup>**



*Incidents were filtered to include the following 'property types': beach, canal/riverbank vegetation, cemetery, golf course, grassland/pasture/grazing etc, heathland, hedge, lake/pond/reservoir, park, playground/recreation area (not equipment), railway trackside vegetation, roadside vegetation, scrub land, tree scrub, wasteland, woodland/forest.*

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<sup>8</sup> Met Office, [Summer 2020](#), September 2020

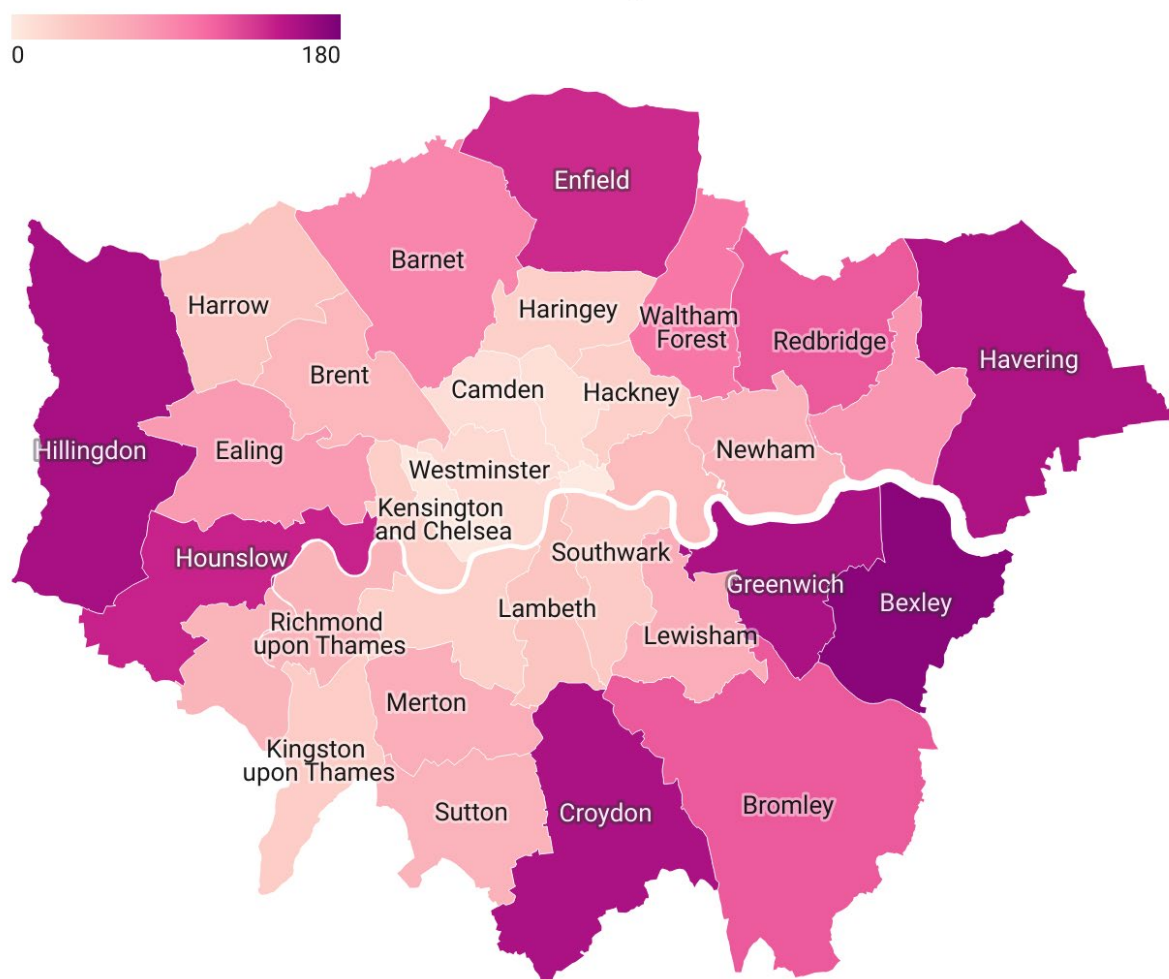
<sup>9</sup> London Datastore, [London Fire Brigade Incident Records](#), accessed June 2024



## 2022

Summer 2022 was warmer than average and saw intense hot spells in each month. A UK record was set on the 19 July when temperatures reached 40.3°C.<sup>12</sup> The UK also experienced little rain throughout most of July and early August. This combination of intense heat and lower rainfall may have contributed to the sharp increase in outdoor fires seen throughout London.

**Figure 5: Number of outdoor fire incidents by London borough, summer 2022<sup>13</sup>**



*Incidents were filtered to include the following 'property types': beach, canal/riverbank vegetation, cemetery, golf course, grassland/pasture/grazing etc, heathland, hedge, lake/pond/reservoir, park, playground/recreation area (not equipment), railway trackside vegetation, roadside vegetation, scrub land, tree scrub, wasteland, woodland/forest.*

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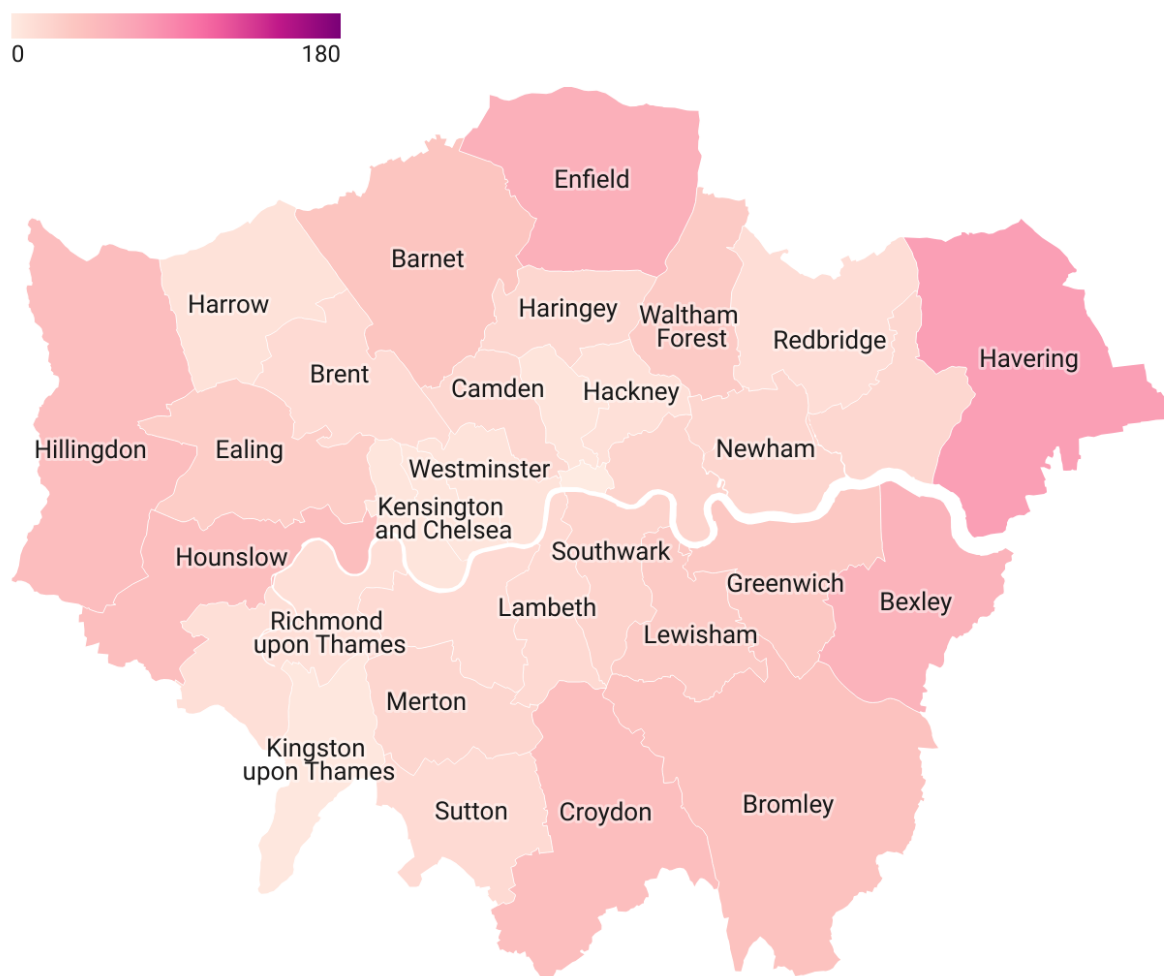
<sup>12</sup> Met Office, [A milestone in UK climate history](#), 22 July 2022

<sup>13</sup> London Datastore, [London Fire Brigade Incident Records](#), accessed June 2024

## 2023

The summer of 2023 saw mixed weather. June 2023 was the UK's warmest and fourth sunniest on record.<sup>14</sup> However, July was cool and wet, and August saw mixed weather.

**Figure 6: Number of outdoor fire incidents by London borough, summer 2023<sup>15</sup>**



*Incidents were filtered to include the following 'property types': beach, canal/riverbank vegetation, cemetery, golf course, grassland/pasture/grazing etc, heathland, hedge, lake/pond/reservoir, park, playground/recreation area (not equipment), railway trackside vegetation, roadside vegetation, scrub land, tree scrub, wasteland, woodland/forest.*

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<sup>14</sup> Met Office, [Climate change impacts June temperature records](#), 3 July 2023

<sup>15</sup> London Datastore, [London Fire Brigade Incident Records](#), accessed June 2024



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### 2020-2023

This visualisation shows the number of outdoor fires experienced by London boroughs between 2020 and 2023. A significant increase can be seen across many boroughs in 2022 due to the high temperatures and low rainfall.

**Figure 7: Outdoor fires by borough, 2020-2023 summer periods<sup>16</sup>**

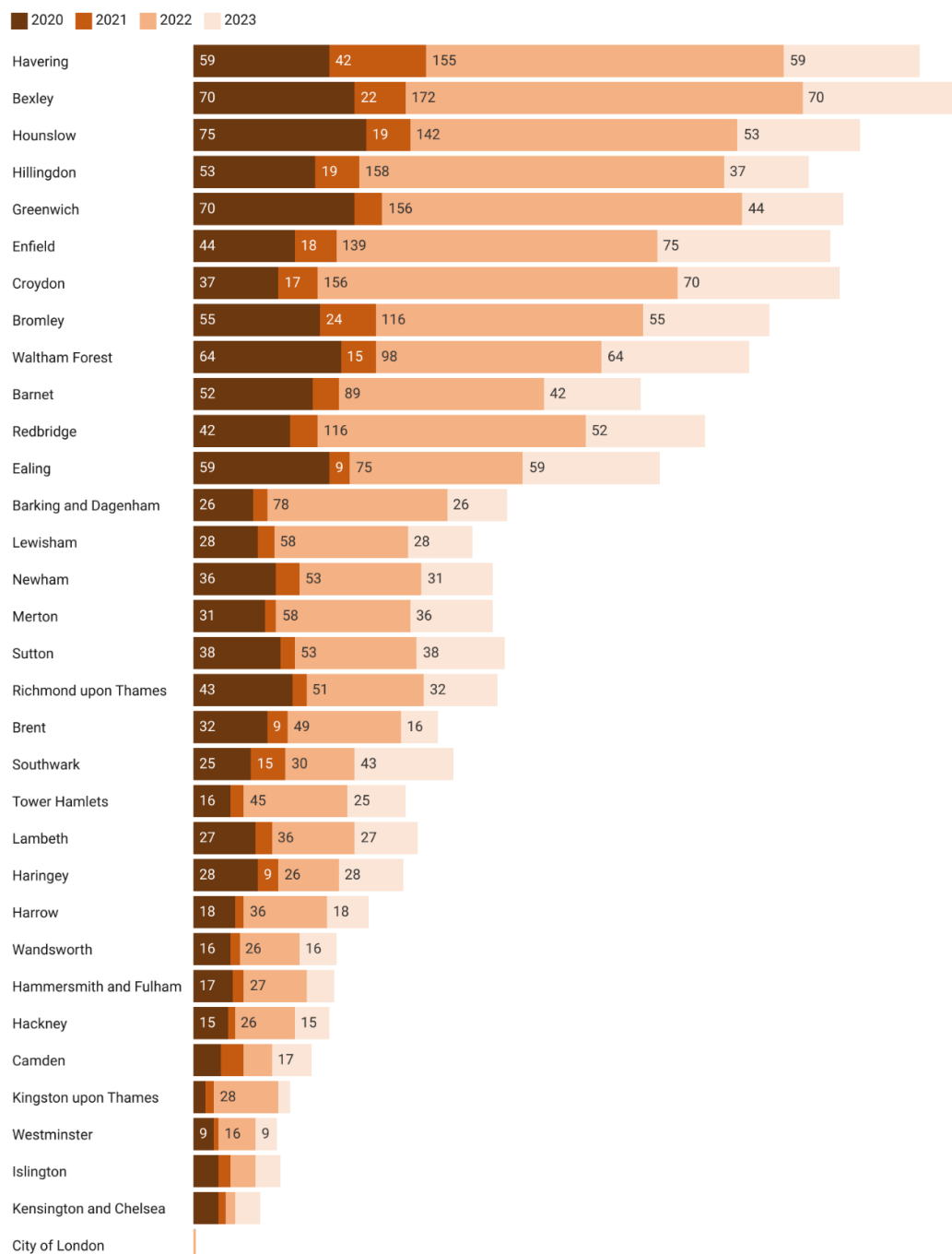


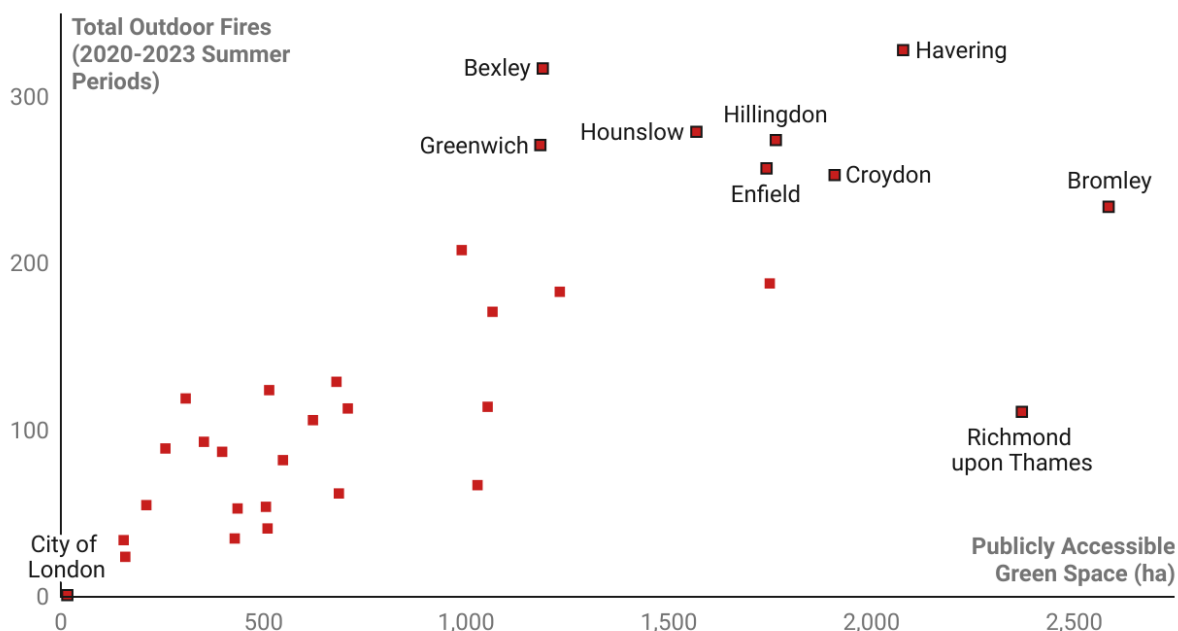
Chart: Research Unit • Source: London Datastore • Created with Datawrapper

<sup>16</sup> London Datastore, [London Fire Brigade Incident Records](#), accessed June 2024

## Green space

The visualisation shows that between 2020 and 2023, boroughs with more publicly accessible green space generally experienced a higher number of outdoor fires.

**Figure 8: Outdoor Fires and Publicly Accessible Green Space<sup>17</sup>**



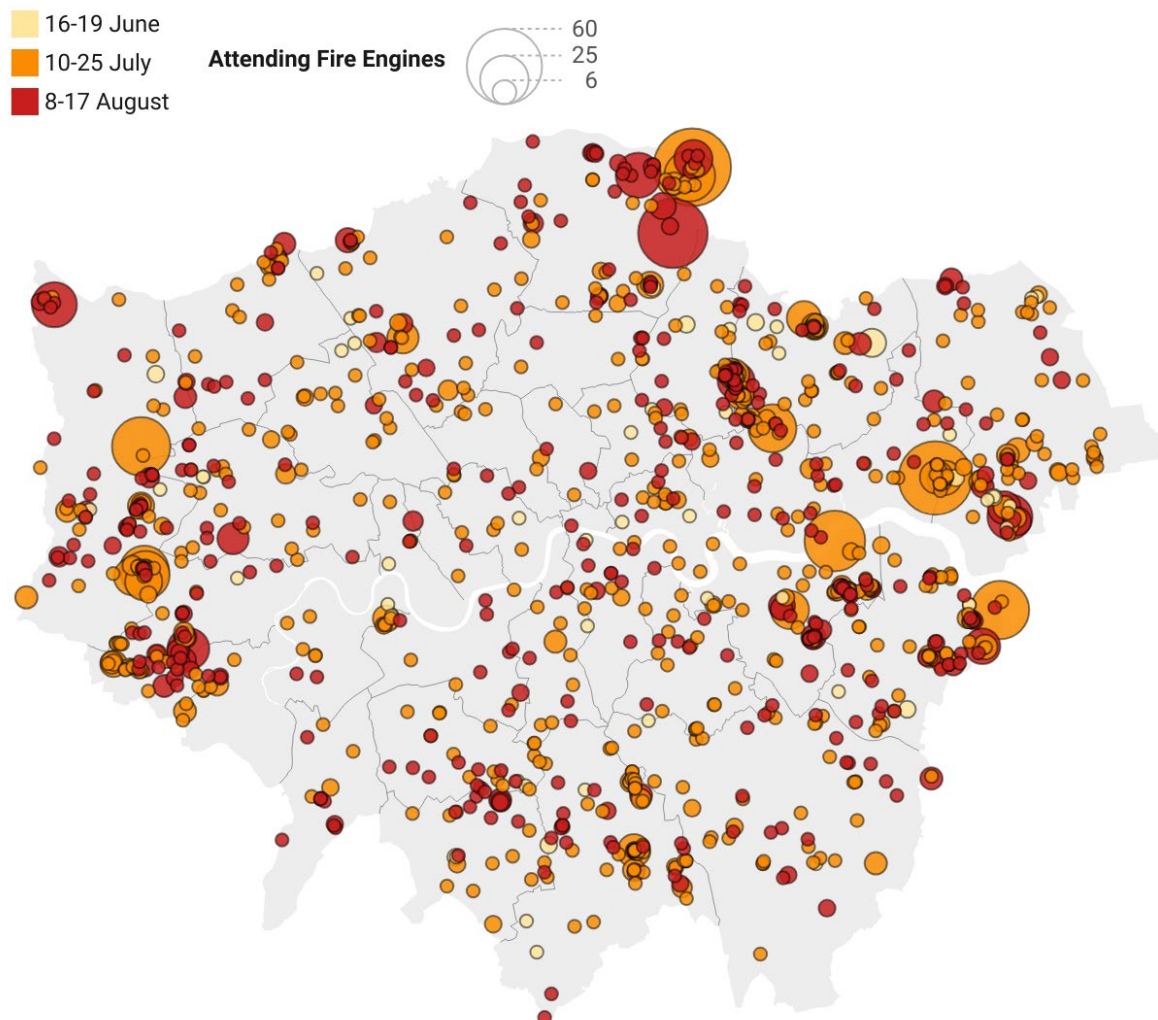
*Incidents were filtered to include the following 'property types': beach, canal/riverbank vegetation, cemetery, golf course, grassland/pasture/grazing etc, heathland, hedge, lake/pond/reservoir, park, playground/recreation area (not equipment), railway trackside vegetation, roadside vegetation, scrub land, tree scrub, wasteland, woodland/forest.*

Chart: Research Unit • Source: London Datastore • Created with Datawrapper

<sup>17</sup> London Datastore, [London Fire Brigade Incident Records](#), accessed June 2024 and Vivideconomics, [Natural capital accounts for public green space in London](#), October 2017

## Summer 2022 Heatwaves

**Figure 9: Location of and response to incidents during summer 2022 heatwaves in London<sup>18</sup>**



*Incidents were filtered to include the following 'property types': beach, canal/riverbank vegetation, cemetery, golf course, grassland/pasture/grazing etc, heathland, hedge, lake/pond/reservoir, park, playground/recreation area (not equipment), railway trackside vegetation, roadside vegetation, scrub land, tree scrub, wasteland, woodland/forest. The heatwave dates were chosen to cover periods when London was covered by a Level 3 Heat Health Alert (HHA) or above.*

Map: Research Unit • Source: London Datastore • Map data: © Crown copyright and database right 2018 • Created with Datawrapper

The summer of 2022 saw a series of intense heatwaves. This visualisation shows the three periods during which London was covered by a Level 3 Heat Health Alert (HHA). The second heatwave also saw a Level 4 HHA issued from the 16-19 July and a UK record was set when a temperature of 40.3°C was recorded.<sup>19</sup> These high temperatures were also

<sup>18</sup> London Datastore, [London Fire Brigade Incident Records](#), accessed June 2024

<sup>19</sup> Met Office, [A milestone in UK climate history](#), 22 July 2022

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combined with relatively low levels of rainfall, with 86mm being recorded across the summer months. This is compared to 191.6mm in 2021 and 171.2mm in 2023.<sup>20</sup>

During these three heatwaves, the LFB was called to an average of 38.4 outdoor fires per day. On Saturday 13 August, the LFB attended 75 outdoor fires.<sup>21</sup>

On Tuesday 19 July, the LFB reporting experiencing its busiest day since World War Two.<sup>22</sup> It received 2,670 calls during the day, compared to an average of 350. In response, the LFB asked the public not to hold barbeques or bonfires.<sup>23</sup> Many retailers stopped selling disposable barbeques over this summer.<sup>24</sup>

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<sup>20</sup> Met Office, [Heathrow Station Data](#), accessed July 2024

<sup>21</sup> London Datastore, [London Fire Brigade Incident Records](#), accessed June 2024

<sup>22</sup> LFB, [Firefighters' heroic actions prevented fatalities on Brigade's busiest day since World War II](#), 20 July 2022

<sup>23</sup> LFB, Major Incident Review: [Extreme Weather Period 2022](#), 30 January 2023

<sup>24</sup> The Guardian, [Disposable barbecues removed from supermarket shelves over wildfire risk](#), 12 August 2022

## About the Research Unit

The London Assembly Research Unit provides an impartial research and information service. We undertake research and analysis on key issues in London to inform the Assembly's work. Our publications are made available for all Londoners.

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### Vietnamese

Nếu ông (bà) muốn nội dung văn bản này được dịch sang tiếng Việt, xin vui lòng liên hệ với chúng tôi bằng điện thoại, thư hoặc thư điện tử theo địa chỉ ở trên.

### Greek

*Εάν επιθυμείτε περίληψη αυτού του κειμένου στην γλώσσα σας, παρακαλώ καλέστε τον αριθμό ή επικοινωνήστε μαζί μας στην ανωτέρω ταχυδρομική ή την ηλεκτρονική διεύθυνση.*

### Turkish

Bu belgenin kendi dilinize çevrilmiş bir özetini okumak isterseniz, lütfen yukarıdaki telefon numarasını arayın, veya posta ya da e-posta adresi aracılığıyla bizimle temasa geçin.

### Punjabi

ਜੇ ਤੁਸੀਂ ਇਸ ਦਸਤਾਵੇਜ਼ ਦਾ ਸੰਖੇਪ ਆਪਣੀ ਭਾਸ਼ਾ ਵਿਚ ਲੈਣਾ ਚਾਹੋ, ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਇਸ ਨੰਬਰ 'ਤੇ ਫੋਨ ਕਰੋ ਜਾਂ ਉਪਰ ਦਿੱਤੇ ਡਾਕ ਜਾਂ ਈਮੇਲ ਪਤੇ 'ਤੇ ਸਾਨੂੰ ਸੰਪਰਕ ਕਰੋ।

### Hindi

यदि आपको इस दस्तावेज़ का सारांश अपनी भाषा में चाहिए तो उपर दिये हुए नंबर पर फोन करें या उपर दिये गये डाक पते या ई मेल पते पर हम से संपर्क करें।

### Bengali

আপনি যদি এই দলিলের একটা সারাংশ নিজের ভাষায় পেতে চান, তাহলে দয়া করে ফো করবেন অথবা উল্লেখিত ডাক ঠিকানায় বা ই-মেইল ঠিকানায় আমাদের সাথে যোগাযোগ করবেন।

### Urdu

اگر آپ کو اس دستاویز کا خلاصہ اپنی زبان میں درکار ہو تو، براہ کرم نمبر پر فون کریں یا مذکورہ بالا ڈاک کے پتے یا ای میل پتے پر ہم سے رابطہ کریں۔

### Arabic

الوصول على ملخص لهذا المستند بلغةك،  
فرجاء الاتصال برقم الهاتف أو الاتصال على  
العنوان البريدي العادي أو عنوان البريد  
الإلكتروني أعلاه.

### Gujarati

જો તમારે આ દસ્તાવેજનો સાર તમારી ભાષામાં જોઈતો હોય તો ઉપર આપેલ નંબર પર ફોન કરો અથવા ઉપર આપેલ ટપાલ અથવા ઈ-મેઇલ સરનામા પર અમારો સંપર્ક કરો.