

# Reptile Monitoring on Hampstead Heath 2024 Update



## In Brief

- Reptile monitoring is Heath Hands' longest volunteer wildlife monitoring programme, with support for Hampstead Heath's Ecologists beginning in 2011.
- Four transects are surveyed from April to November, including a transect on the Kenwood Estate.
- A total of 148 Grass Snake sightings were recorded 2023
- Staff and over 15 volunteers conducting 114 field visits, contributing over 500 Volunteer hours.
- Potential evidence of Grass Snakes breeding in habitat piles created in 2022/23.

## Background

- Grass Snakes *Natrix helvetica* (Figure 1) are present on Hampstead Heath, making them the closest sustained population of native snakes to Central London. They are the only native reptiles currently known to be present on Hampstead Heath.
- These harmless, non-venomous snakes prefer wetland habitats and dense vegetation, where they prey mainly on amphibians (frogs, toads and newts) as well as fish and small mammals. With its network of ponds, meadows, rough grassland and scrub, Hampstead Heath provides many favourable areas for these snakes.
- Although one of the UK's most widespread reptiles, Grass Snakes are declining nationally and are a conservation priority species under Section 41 of the UK's Wildlife and Countryside Act. This is largely due to habitat loss. It is therefore important to monitor and conserve the population on Hampstead Heath.
- Heath Hands have partnered with the City of London Corporation and English Heritage to run a reptile monitoring programme on the Heath since 2011.
- We have also created breeding sites for in the form of compost piles from meadow hay cutting (Figure 2). These 'snake heaps' are placed in key areas for Grass Snake activity and are supported by a public fundraising campaign.



Figure 1 - An adult grass snake photographed by a Wildlife Monitoring Volunteer on the Heath.



Figure 2 - A snake heap on the Heath.

## Methods

- Reptile monitoring is carried out by Heath Hands Wildlife Monitoring Volunteers and staff.
- Set routes (transects) are walked weekly by small groups of volunteers. Monitors record sightings and other wildlife, and submit results and photos electronically.
- Transects 1 to 3 are on Hampstead Heath, predominately within fenced areas, non public areas. They encompass wetland habitats around ponds, as well as woodland, scrub and grassland. Transect 4 is on the Kenwood Estate and is almost entirely in unfenced areas. The main habitat here is acid grassland and bracken/bramble scrub, and it also includes the SSSI *Sphagnum* bog.
- Surveys take place from April to the end of October to encompass the activity period of the snakes (or until several weeks have passed without records).
- The transects include a route of refuges (corrugated roof tiles; Figure 4), placed in suitable habitat, that attract reptiles by providing shelter and warmth (for basking). Refuges are numbered and GPS tagged to help with accurate data collection.
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- Records are taken on individuals counted, size/length (to estimate age), behaviour and location. Other species found are also recorded, especially small mammals and amphibians (Figures 5 and 6).
- The annual records are collated and sent to the Heath's Ecologist, local conservation groups and the Garden Team at Kenwood House.

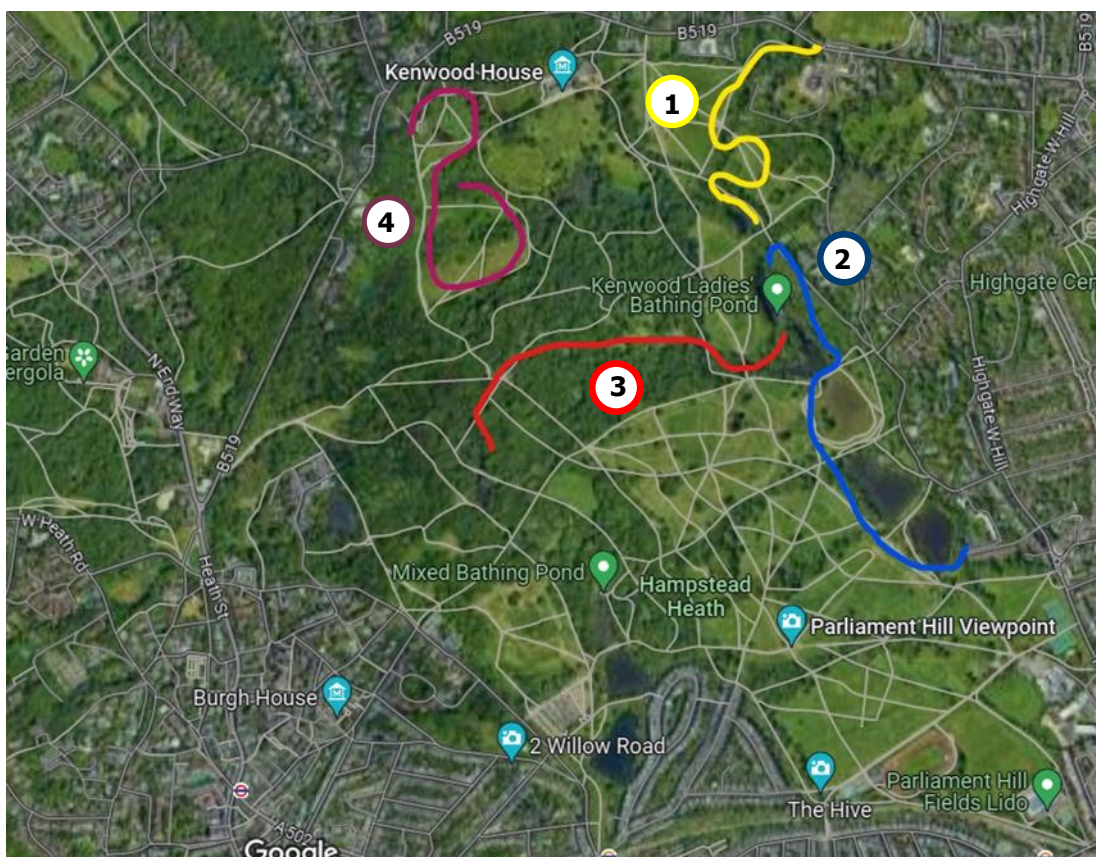


Figure 3 – the reptile monitoring transects on Hampstead Heath and Kenwood Estate.



Figure 4 - Wildlife Monitoring Volunteers checking a reptile refuge.



Figure 5 – Common Toad *Bufo bufo* under a refuge.



Figure 6 – Two Wood Mice *Apodemus sylvaticus*

## Results

148 Grass Snake sightings were recorded in total in 2023, from 114 field visits. This equated to 1.3 sightings per visit. Volunteers contributed over 500 hours of their time to the surveys.

Grass Snakes were recorded on all four transects, mainly in enclosed areas. However, they were not recorded from all refuges, and were absent from parts of all transect routes, including much of transect 4. See figure 7 below for rough locations.

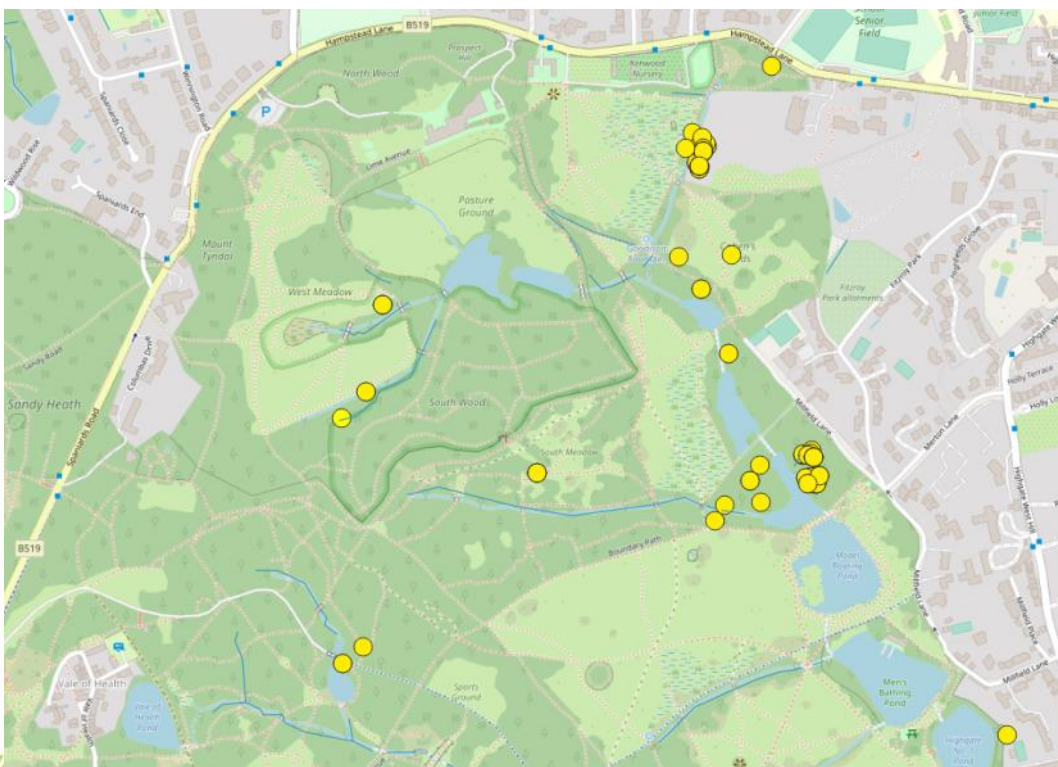


Figure 7 – Locations of Grass Snakes recorded on Hampstead Heath in 2023.

## Records by transects

Grass Snakes were recorded on all four transects. Transect 1 had the most, and the highest sighting rate, whereas transect 4 had the fewest sightings and lowest sighting rate (Figure 8).

Transect:	1	2	3	4	Overall
<b>Number of sightings</b>	75	46	17	10	<b>148</b>
<b>Number of visits</b>	32	31	25	26	<b>114</b>
<b>Sighting rate</b>	2.34	1.48	0.68	0.38	<b>1.31</b>

Figure 8 – Sightings by transect. Sighting rate is number of sightings divided by number of visits per transect.

## Records through the season

The earliest record was on the 14<sup>th</sup> of April, with the latest on the 28<sup>th</sup> of October, both on Transect 1. However, this latest record was an outlier, since no snakes were recorded after the 10<sup>th</sup> of October on Transect 2 or after September on Transects 3 and 4.

A breakdown of Grass Snake records by month is provided in Figure 9 and compared to the previous 2 years in Figure 10. Snake activity varies through the season. The peak months for snake sightings overall in 2023 were August and September. October had a relatively high sighting rate (higher than all the spring and early summer months) despite the lack of sightings this month on Transects 3 and 4. The sighting rate from July to October was much higher than in the two previous years (Figure 10).

## Population structure

The recorded size estimates of snakes found during monitoring in 2023 ranged from 12cm to over 90cm. Grass Snakes over 45cm are regarded as adults, and those under 15cm as yearlings or younger, so the records indicate that the full age range is present on the Heath. Subadults (30-40cm) and smaller adults (40-70cm) were often recorded.

## Use of the snake heaps

Snakes were regularly found on some of the heaps. In some survey areas, this is where they were most abundant under the refuges (See Figure 11 for an example). Individuals found under refuges on the heaps included yearling snakes (Figure 12), with especially small, pale individuals found on one heap in September possibly being a group of hatchlings indicating possible use of the heaps for breeding.

Figure 9 – Sightings by month. Sighting rate is number of sightings divided by number of visits in the month.

Month	Sightings	Visits	Sighting rate
Apr	3	13	0.23
May	18	24	0.75
Jun	13	19	0.68
Jul	24	15	1.60
Aug	42	18	2.33
Sep	32	15	2.13
Oct	16	9	1.78

Figure 10– Grass Sighting rate by month over the past 3 years.

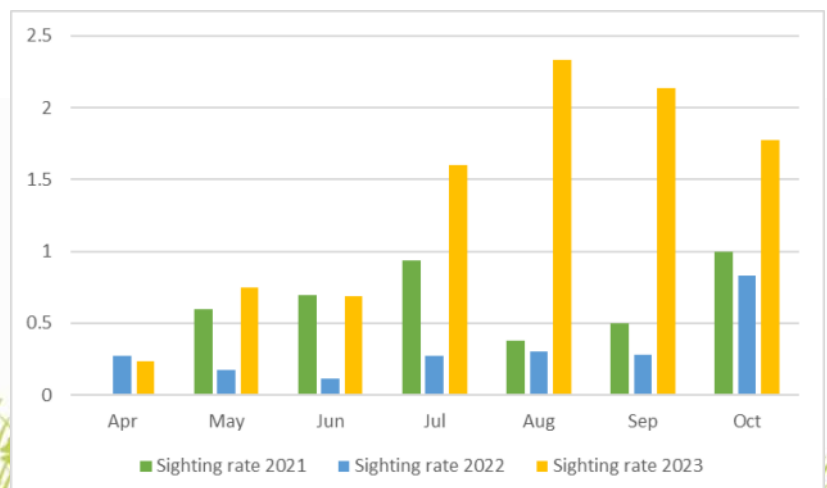




Figure 11 – Finding three individuals under a refuge on a snake heap.



Figure 12– A yearling found under a efrage on a snake heap. Its cloudy eye indicates it will soon shed its skin.

## Discussion and Conclusions

2023 was a successful year of reptile monitoring, with the sighting rate of snakes consistently higher during the summer than in previous years. The 2023 records show that Grass Snakes have a continued presence on Hampstead Heath and the Kenwood Estate, and are widespread in the surveyed areas. Although relatively few records were found at Kenwood compared to other transects, records are more abundant than in previous. Also, they were sighted throughout the spring and summer months so are likely resident there. The reason for so few sightings on the Estate may be due to less optimal habitat (being away from permanent water) and/or higher public disturbance.

Conversely, the abundance of records on transect 1 is largely from an enclosed pond area which has a particularly high rate of sightings. This indicates a high habitat suitability and possibly a positive effect of a lack of public disturbance. On Transect 3, snakes were rarely found in South Meadow and the Viaduct Pond enclosure. Although the viaduct area was apparently suitable wetland habitat, the marshy nature of the site meant there was little suitably dry, sunny ground to place refuges.

A limitation of the monitoring methods is that we cannot recognise individual snakes, so cannot tell exact population numbers or establish if they are moving between areas of the Heath. This would require more intrusive monitoring techniques or improved photography. Snakes are not handled to limit extra disturbance to them on a site that already has high public pressure.

Crucially, records of yearlings show that the population bred in 2022, with possible evidence of breeding this year within one of our snake heaps. A search of the for eggshells will be carried out to confirm this.

Also of interest this year was the high sighting rate in October compared to previous years. This likely reflects the very mild autumn of 2023, which allowed the snakes to remain active for longer. This shows the value of monitoring reptiles beyond the summer months, which is especially important in informing the timing of habitat and grassland management.

Our thanks to our volunteer Wildlife Monitors, without whom this programme would not be possible, as well as to our partners at the City of London Corporation and English Heritage for supporting us on our monitoring programmes.

Find out more about our Wildlife Monitoring Programmes at: [heath-hands.org.uk/conservation](https://heath-hands.org.uk/conservation)