Observatree Volunteer Activity Report 2022

Findings from Observatree volunteer data from 1st January 2022 – 31st December 2022

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Contents

Credits

Rebecca Gosling (volunteer management, data analysis and write up), Fritha West (volunteer management and data entry), Peter Crow (project management, maps and data entry), Matt Parratt (volunteer training and scientific support), Ana Perez-Sierra (Tree Alert diagnostics and scientific support), Lucy Turner (project support and Tree Alert processing), Charles Lane (volunteer training and scientific support) and **all the Observatree volunteers for their tireless support, surveys and enthusiasm.**

The Observatree Partnership (led by Forest Research in partnership with Fera Science Ltd, Forestry England, Scottish Forestry, Woodland Trust, National Trust, Animal & Plant Health Agency, Department for Environmental Food & Rural Affairs and Welsh Government).

Title page photo credit: Rhiannon Hoy Woodland Trust

Introduction

Welcome to the annual Observatree review. I hope you find this review, covering the past year, both useful and inspiring.

We recruited 100 new volunteers in March, who received a warm welcome, induction webinars and training days. And they hit the ground running! A big thank you to everyone who joined us and everyone who helped them along the way. We held 9 training days, training 90 volunteers across the country. We also held 3 mentoring days, to show volunteers how Observatree data are used. The mentoring days also provided us with great tours around tree health laboratories, a much-appreciated insight for all.

Last year, 2022, was a record-breaking year for Observatree. As you will see, the number of reports was exceptional. We also collected data for some key projects, such as alder declines in Scotland and oak processionary moth monitoring in southern England.

Our volunteer network has had such a fantastic year, I'm so excited to see what we do next. This really just leaves me to say, thank you. Thank you to all our wonderful volunteers who survey our trees, woods and forests for pests and diseases. Without you, Observatree would not exist.

Rebecca Gosling

Conservation Evidence Officer – Tree Health

Observatree Volunteer Manager

Woodland Trust

Please note: This report is a version of the annual report we produce to provide feedback for Observatree volunteers.

Survey Totals

In 2022 Observatree volunteers submitted a fantastic 4899 reports! Our best year, an amazing achievement, thank you to all who submitted data towards this (Figure 1).

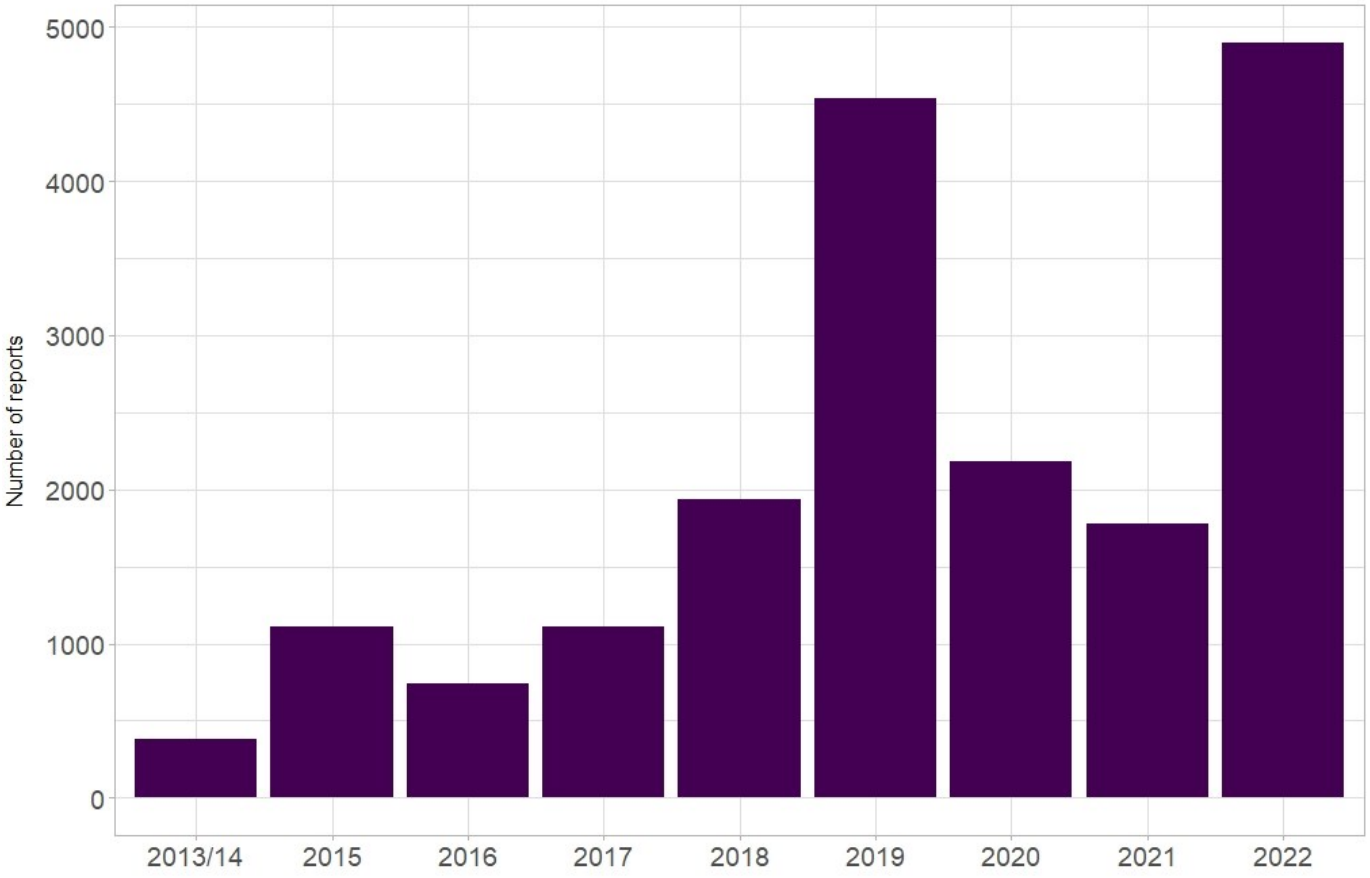


Figure 1. Number of tree health reports submitted by Observatree volunteers each year since the project started. The most per annum being submitted during 2022.

These reports can be split into general surveys, when volunteers go out and see what they can find, or sentinel surveys, where an individual tree is monitored longer term. We received 2704 general surveys and 2195 sentinel surveys. This included 299 new reports of priority pests and diseases, and 433 other pests and diseases. **This is our largest 'other pest and disease' total ever!**

You can read more about what these survey types told us in the next few sections of the report. For now, you can see these results in the map on the next page (Figure 2).

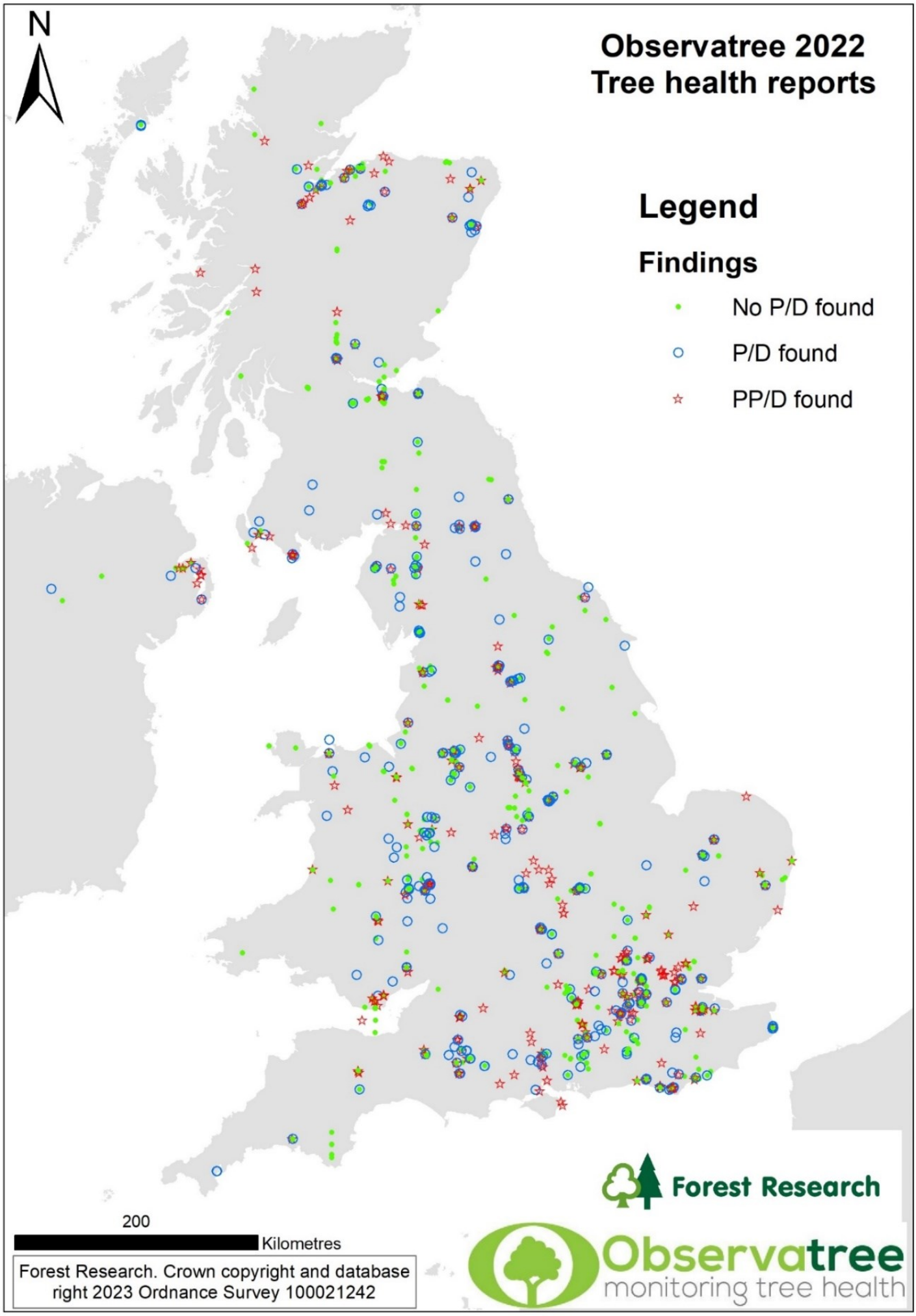


Figure 2. Observatree reports 2022.

Total Pests and Disease Findings

At Observatree we have 23 priority pest and diseases (found here). These have been chosen by tree health scientists for the significant threat they pose to UK species, as well as their ease of identification in the field.

During 2022, a total of 313 priority pests and diseases were recorded. Our second highest annual figure! Surpassed only by 2019 (Figure 3). We also had 442 other pest and diseases recorded, these are the ones volunteers report, but are not on our priority list. **This is the highest 'other pest or disease' figure for the project to date!**

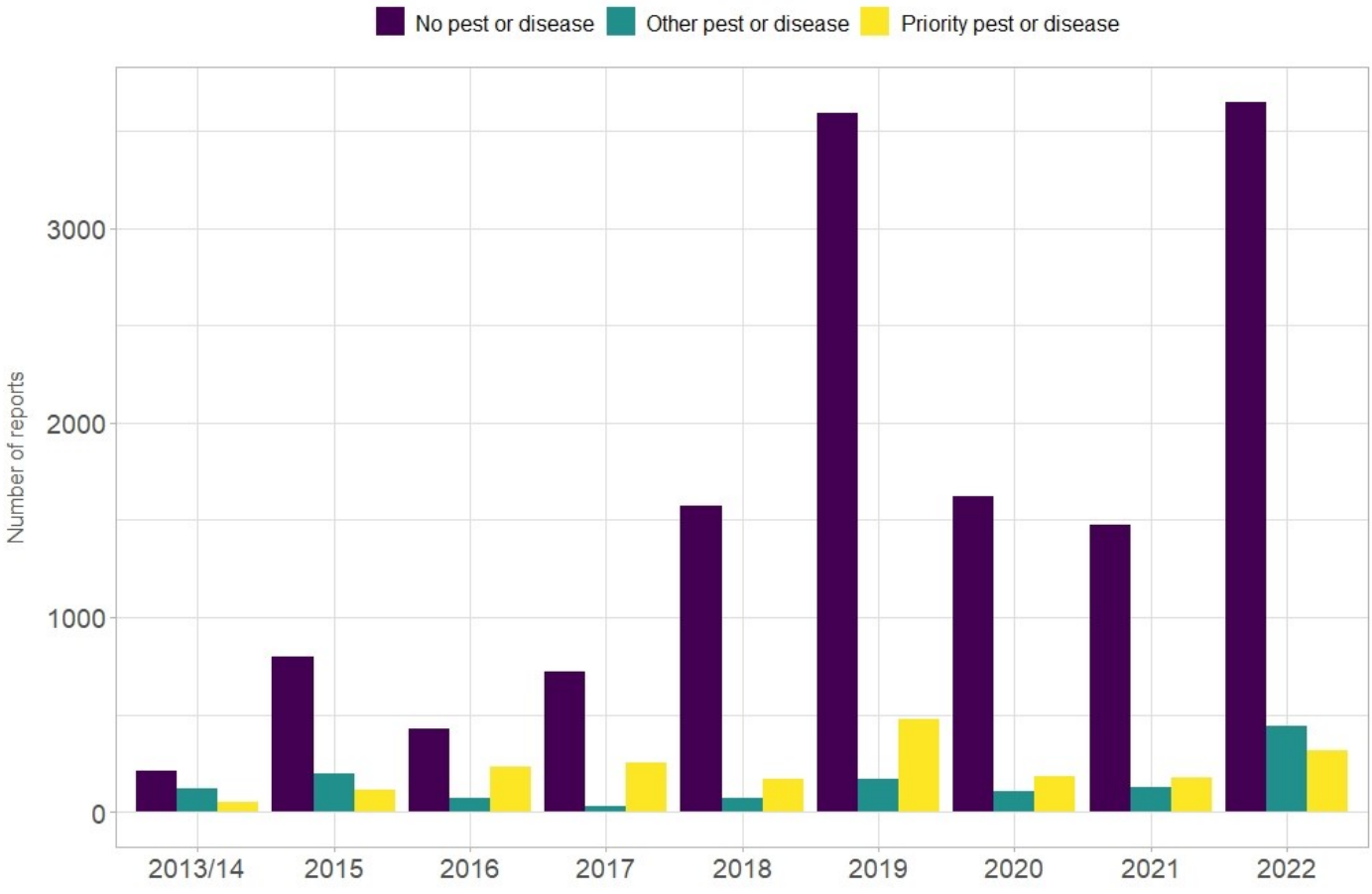


Figure 3. Number of tree health reports submitted by Observatree volunteers by finding, since the project began. During 2022 the most 'other pest and disease' reports per annum were submitted.

Priority Pests and Disease Findings

Please note throughout this document the pest and disease reports are 'suspected' and have not been confirmed by diagnosticians.

Chalara ash dieback was the most reported priority pest and disease this year – and has been for since 2016 (Figure 4)! *Phytophthora lateralis* and *Phytophthora austrocedri* were not reported at all this year which is often the case as they are less common and can be difficult to spot.

The pests and diseases reported each year fluctuates, this may represent where surveys are taking place, the way our network is distributed and targeted survey efforts that year. Therefore, it should not be assumed the graphs on the next page represent pest and disease population changes, but introductions and spread of elm zig zag sawfly and oriental chestnut gall wasp do show quite nicely (Figure 5).

There is a good distribution of these findings across the UK, although there are gaps in pest or disease reporting in places such as Lincolnshire and southern Scotland where we have less volunteers (Figure 6).

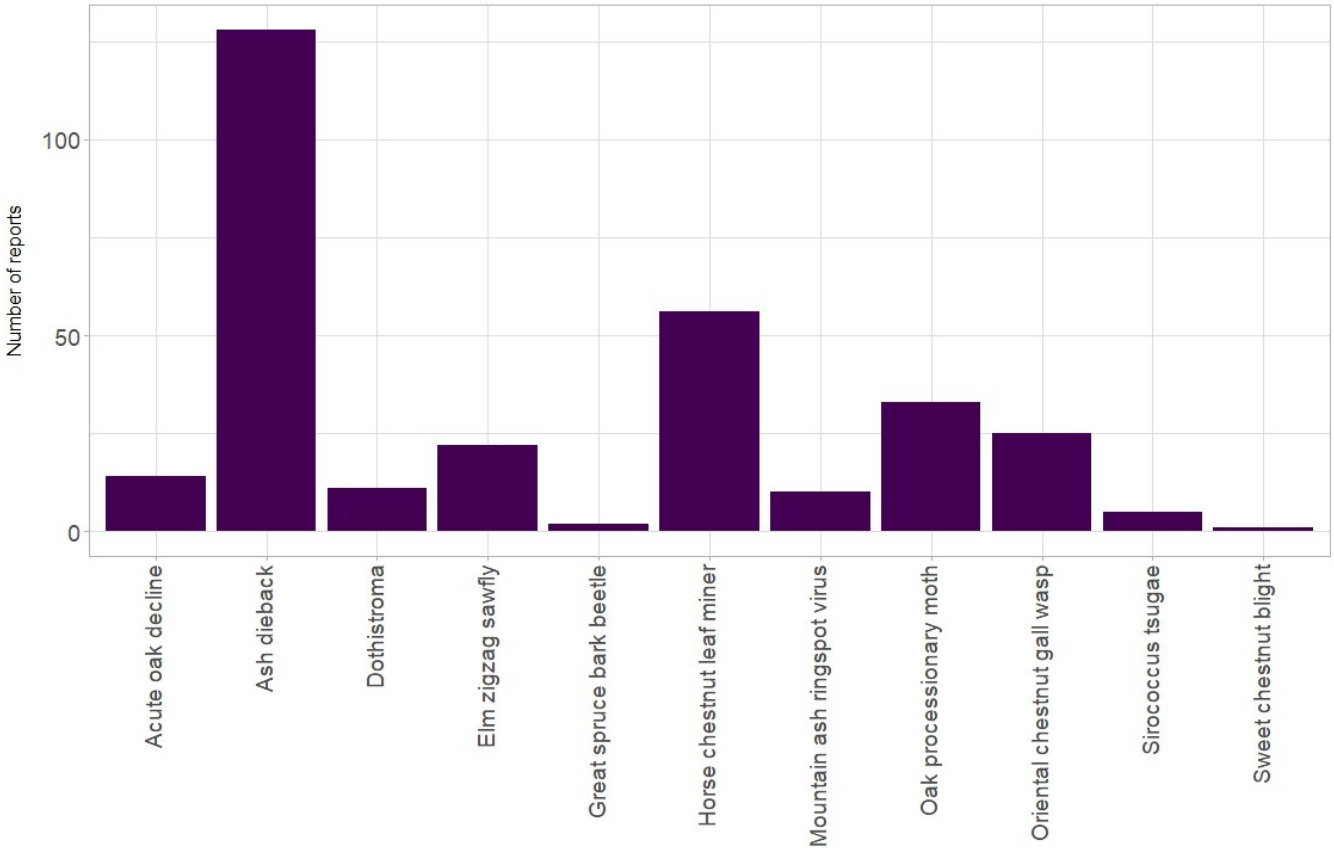


Figure 4. Suspected priority pest and disease findings from the Observatree tree health surveyor reports during 2022.

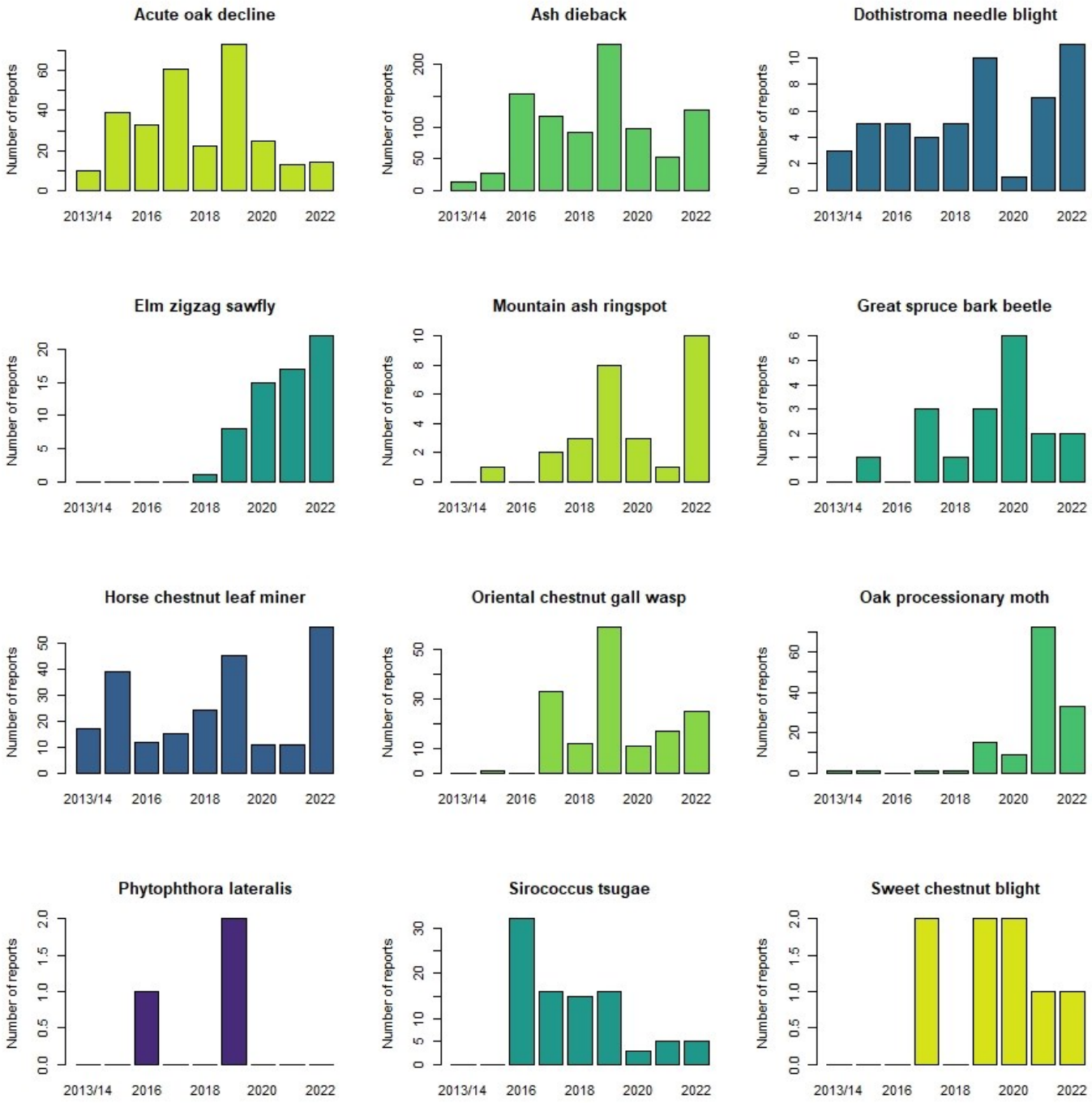


Figure 5. Suspected priority pest and disease findings per year since the project began. The changes may reflect volunteer effort so should not be assumed to represent population changes.

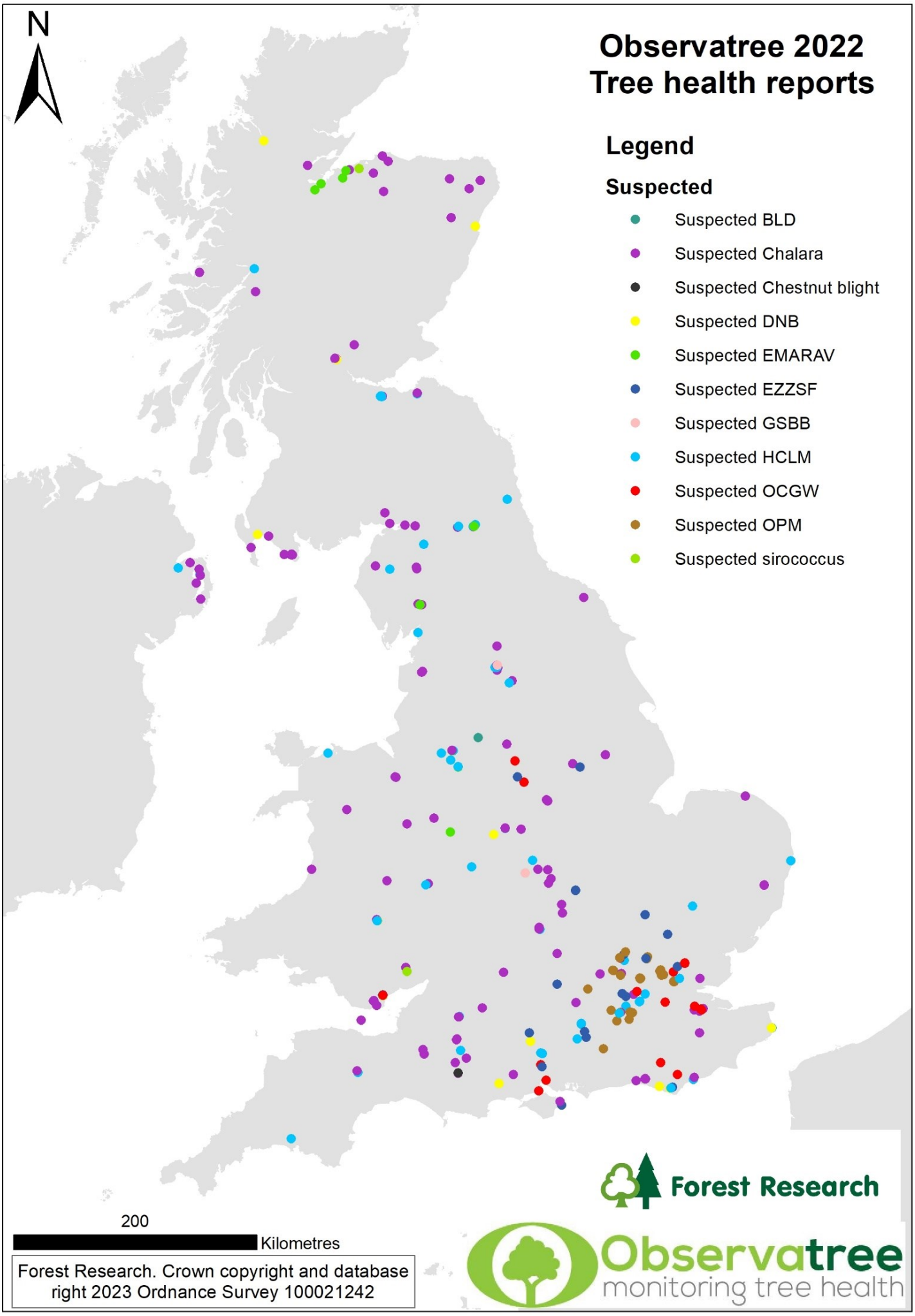


Figure 6. Suspected priority pest and disease findings 2022.

Other Pest and Disease Findings

As previously mentioned, we received the highest number of other pest and disease findings to date. This is a great achievement! Most reports were for symptoms, such as cankers and dieback, rather than named pests or diseases (Figure 7). This is great as it shows that volunteers are reporting things even if they do not know the cause, which is important for any worrying symptoms to ensure that is it seen by diagnosticians in case it is something of concern.

It's important to note that not all these findings are a 'problem', and some may be natural ecosystem functioning.

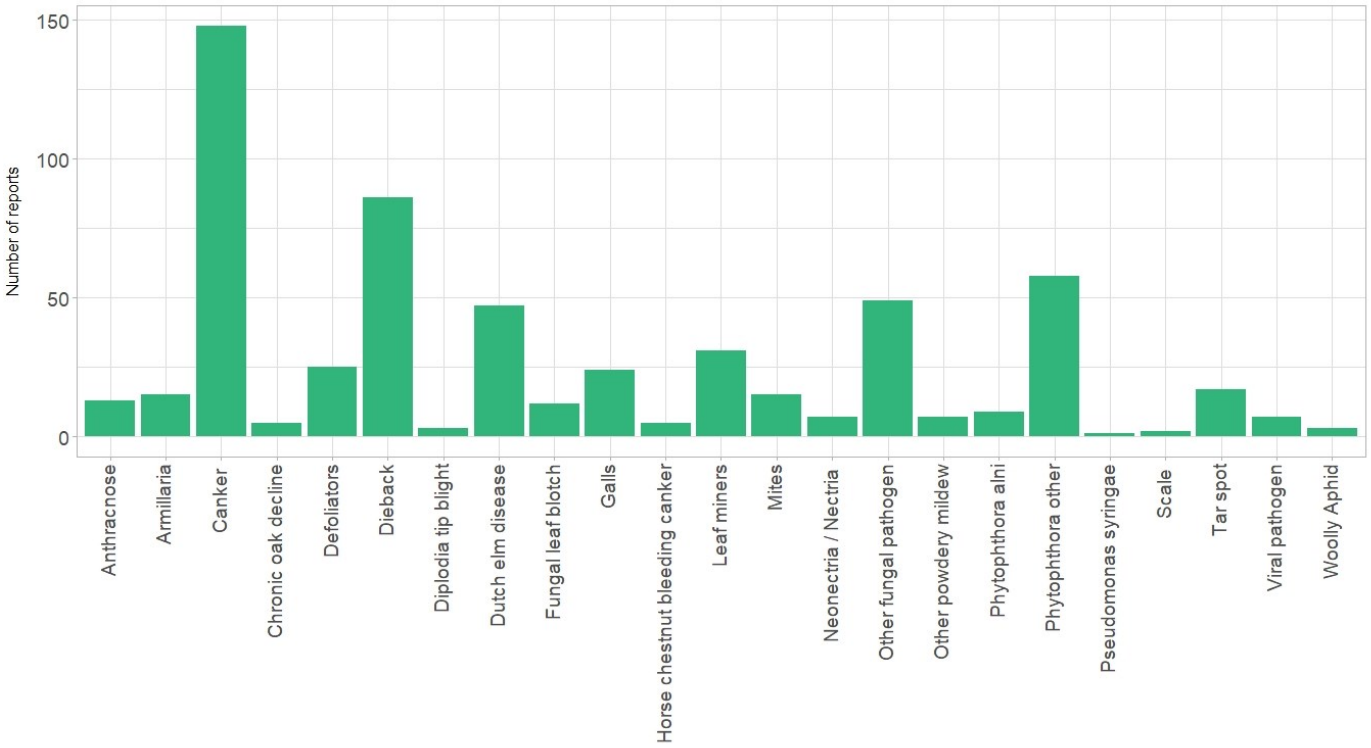
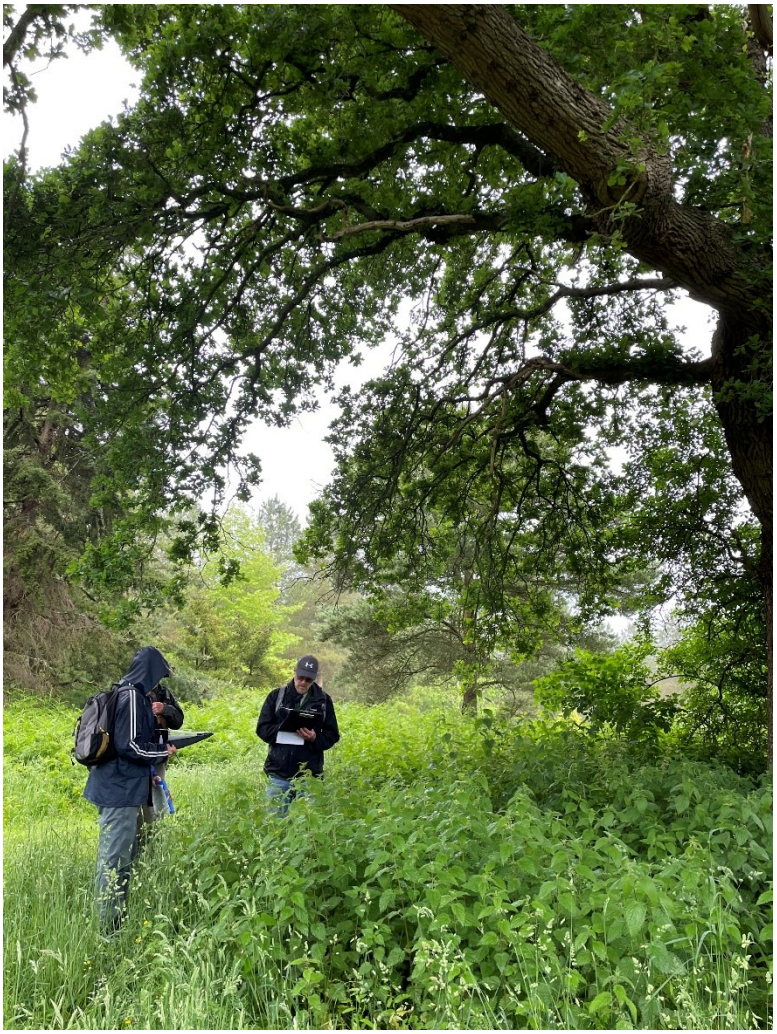


Figure 7. Other pest and disease findings from the Observatree tree health surveyor reports during 2022. The majority of the reports are for symptoms, rather than the causal agent, such as cankers and dieback.

Host Trees

On the next two pages you can find graphs showing the host trees recorded this year, including the total for all surveys (Figure 8) and the total for sentinel trees (Figure 9). As usual, our most recorded trees are ash, beech, birch, elm, horse chestnut, oak, pine, rowan, sweet chestnut and sycamore. In addition, hawthorn was a popular tree this year, with 98 records, the highest to date. Oak takes the crown once again for all surveys and for registered sentinel trees, as our most recorded, and probably most loved, tree!

In fact, this year volunteers recorded the most tree species ever! This is fantastic to see more and more species being recorded. The more we can keep our eye on, the more important pests or diseases we might spot!



Recording oaks at our training days, even in the rain!

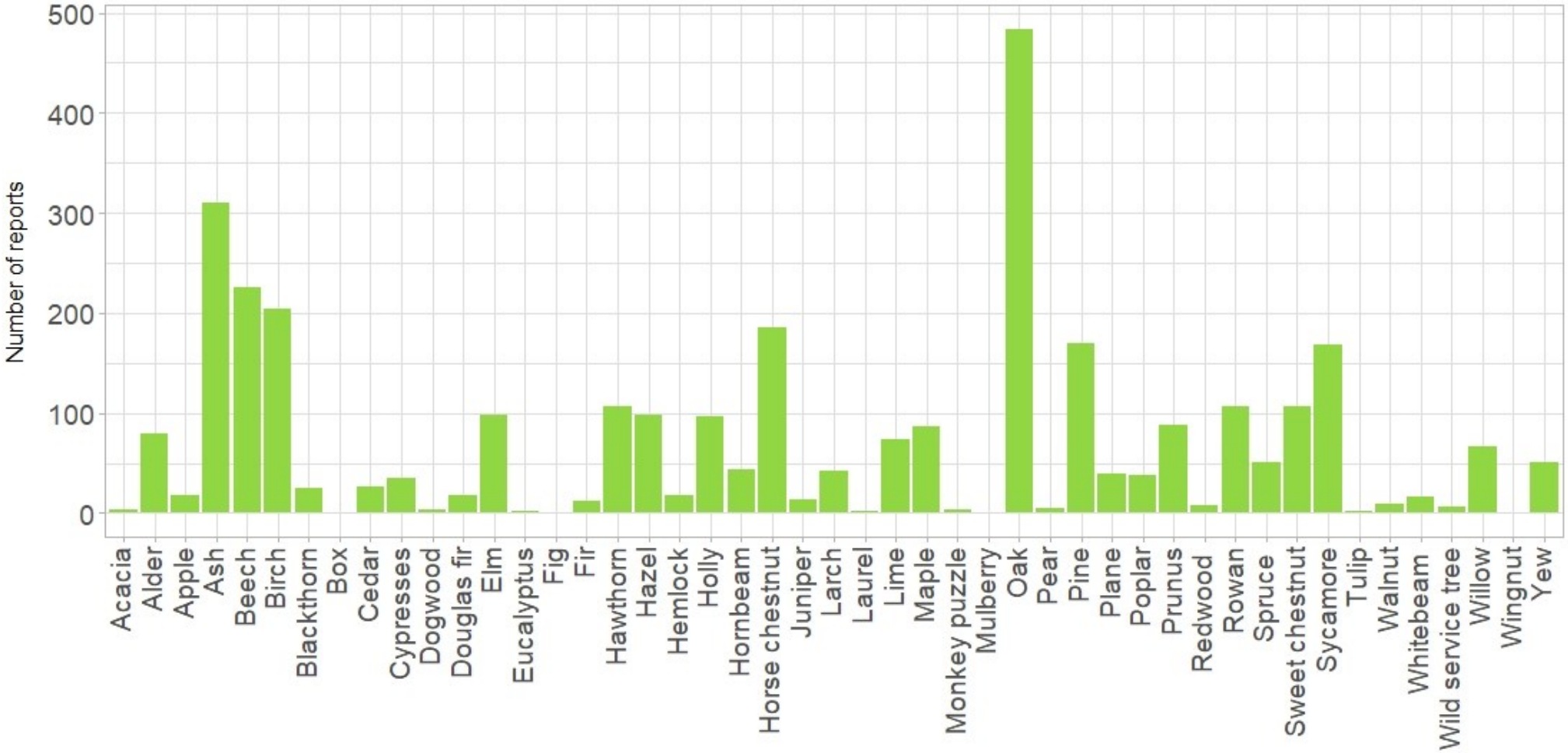


Figure 8. Host trees recorded from the Observatree tree health surveyor reports during 2022. Oak is the most surveyed tree.

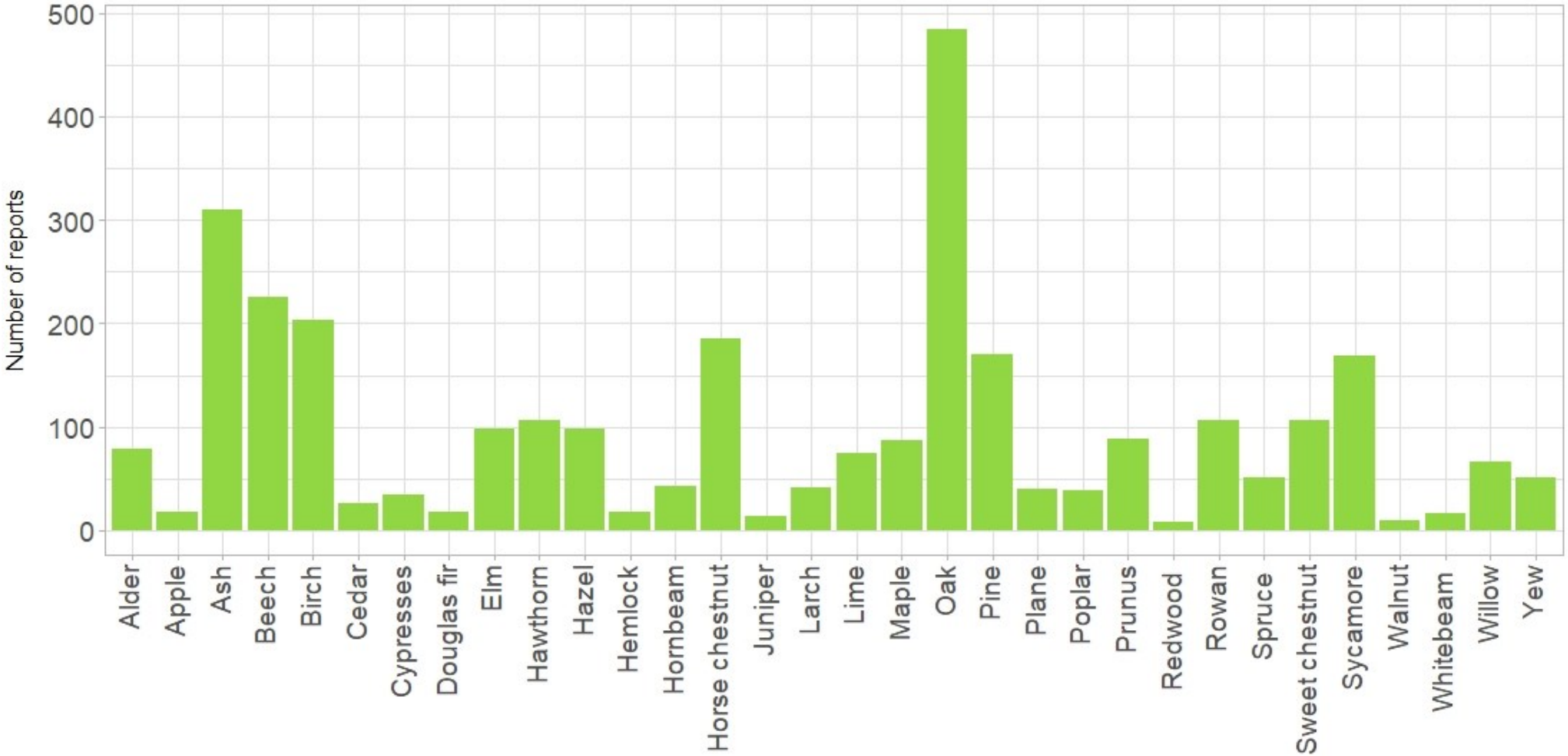


Figure 9. Host trees recorded from the Observatree sentinel tree reports during 2022. The data represents individual trees rather than number of reports as one tree will have many reports throughout the year. Oak is also the most registered sentinel tree species.

Sentinel Trees

A total of 675 individual sentinel trees were monitored by Observatree volunteers last year. **Again, our largest number to date!**

For these trees a total of 2195 sentinel reports were submitted over the past year. Throughout 2022, 115 of these trees were recorded with new other pests or diseases, and 70 with new priority pests and diseases. These findings could be existing records developing a new pest or disease, or a new sentinel being registered with a pest or disease. We had a lot of sentinel trees registered this year by our fabulous new volunteers.

We are very happy to see that most of these reports identify healthy trees, although sadly our healthy tree numbers seem to be decreasing (Figure 10)! Those with a pest or disease, most are 'stable'. Our sentinel tree network are, perhaps unsurprisingly, suffering most from ash dieback, with horse chestnut leaf miner coming second (Figure 11). This is also represented in the host trees by status, as 61% of ash sentinel trees, and 59% of sentinel horse chestnuts, have a pest or disease (Figure 12).

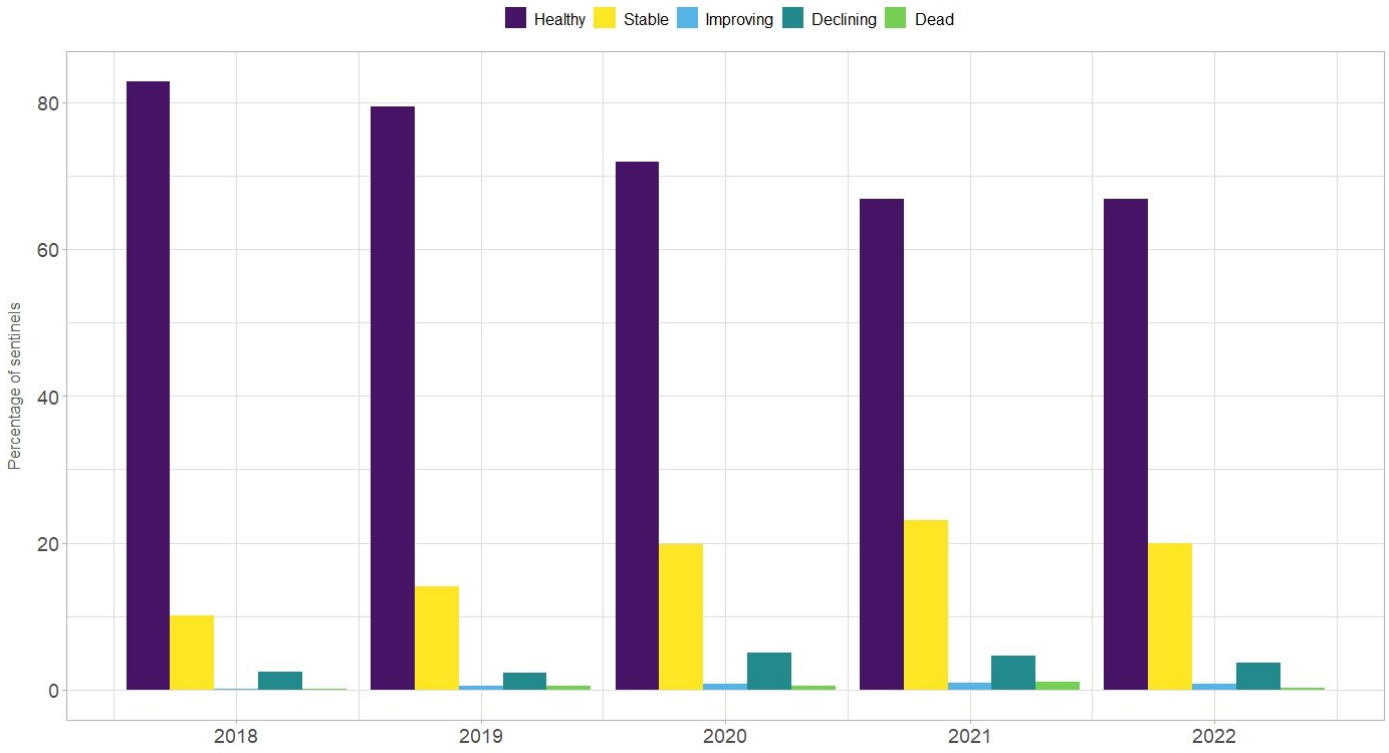


Figure 10. Recorded status of sentinel trees since the sentinel tree network was created in 2018.

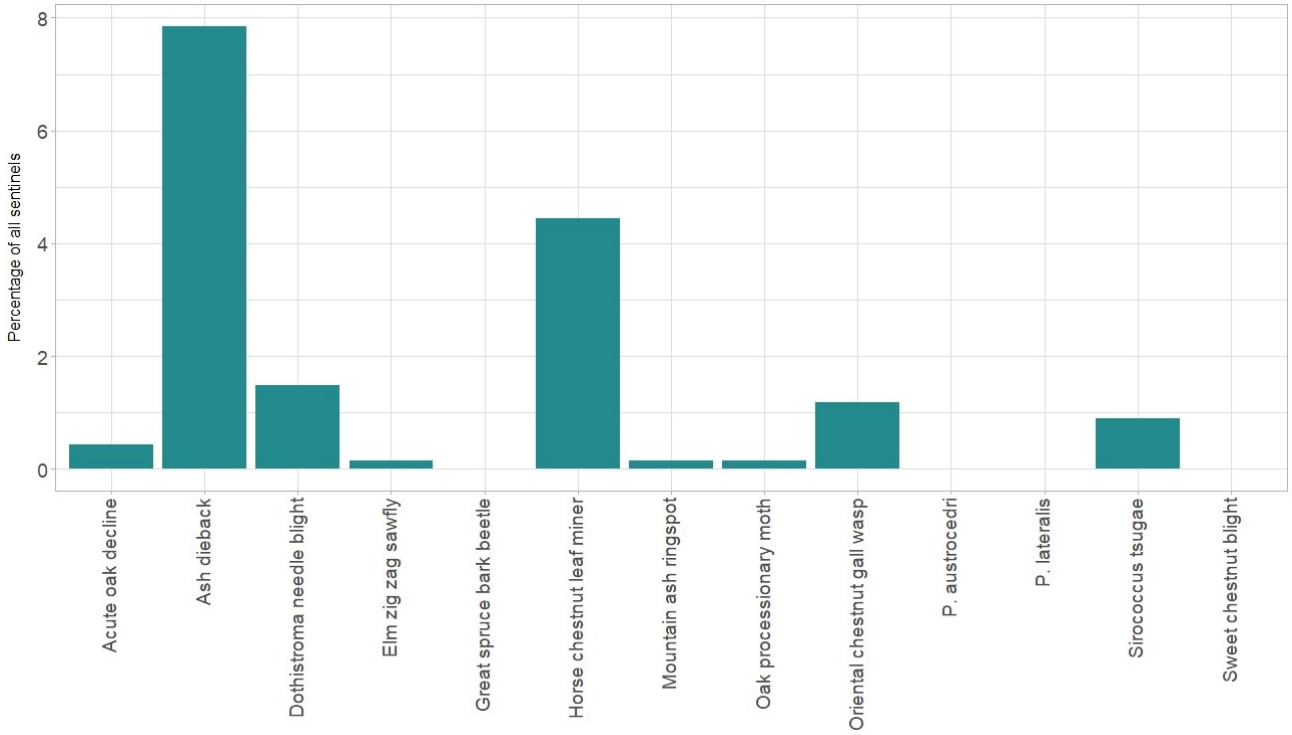


Figure 11. Percentage of individual sentinel trees recorded with a suspected priority pest or disease.

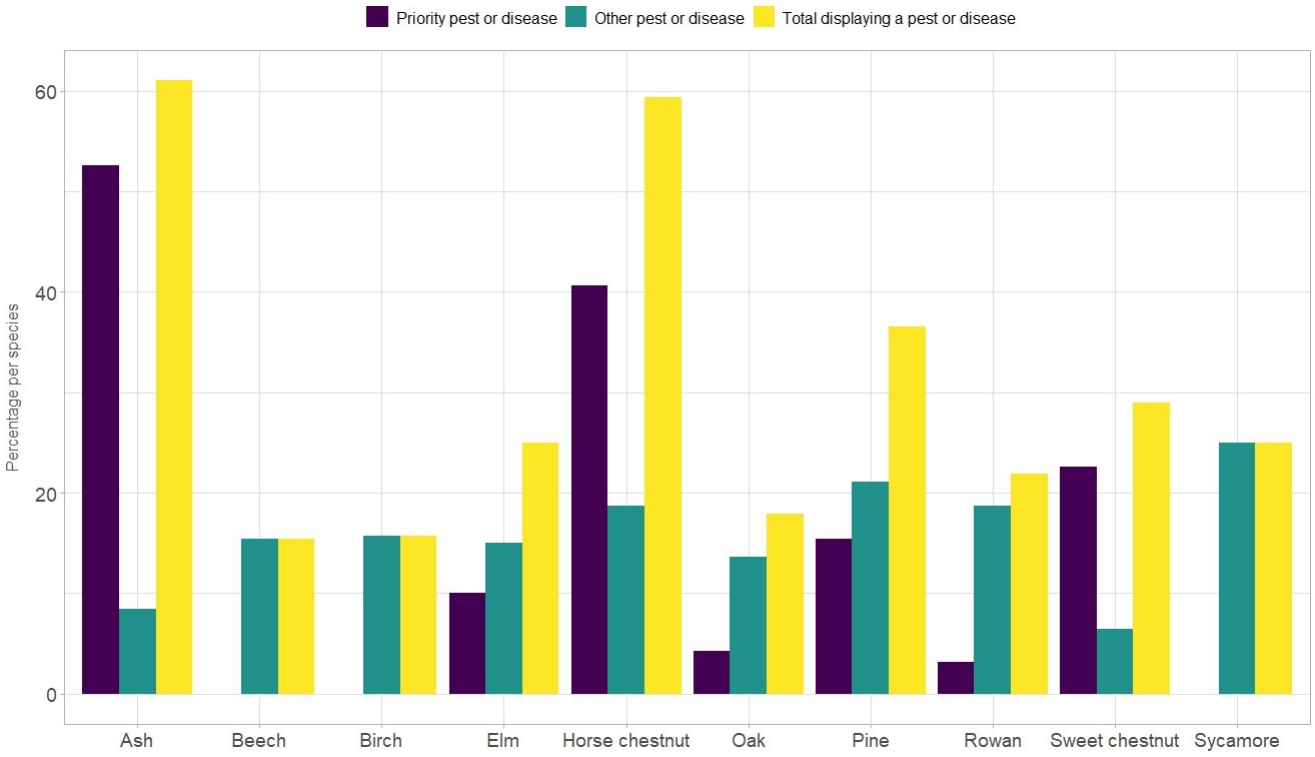


Figure 12. Percentage of individual sentinel trees recorded with a suspected priority pest or disease by the most recorded host species.

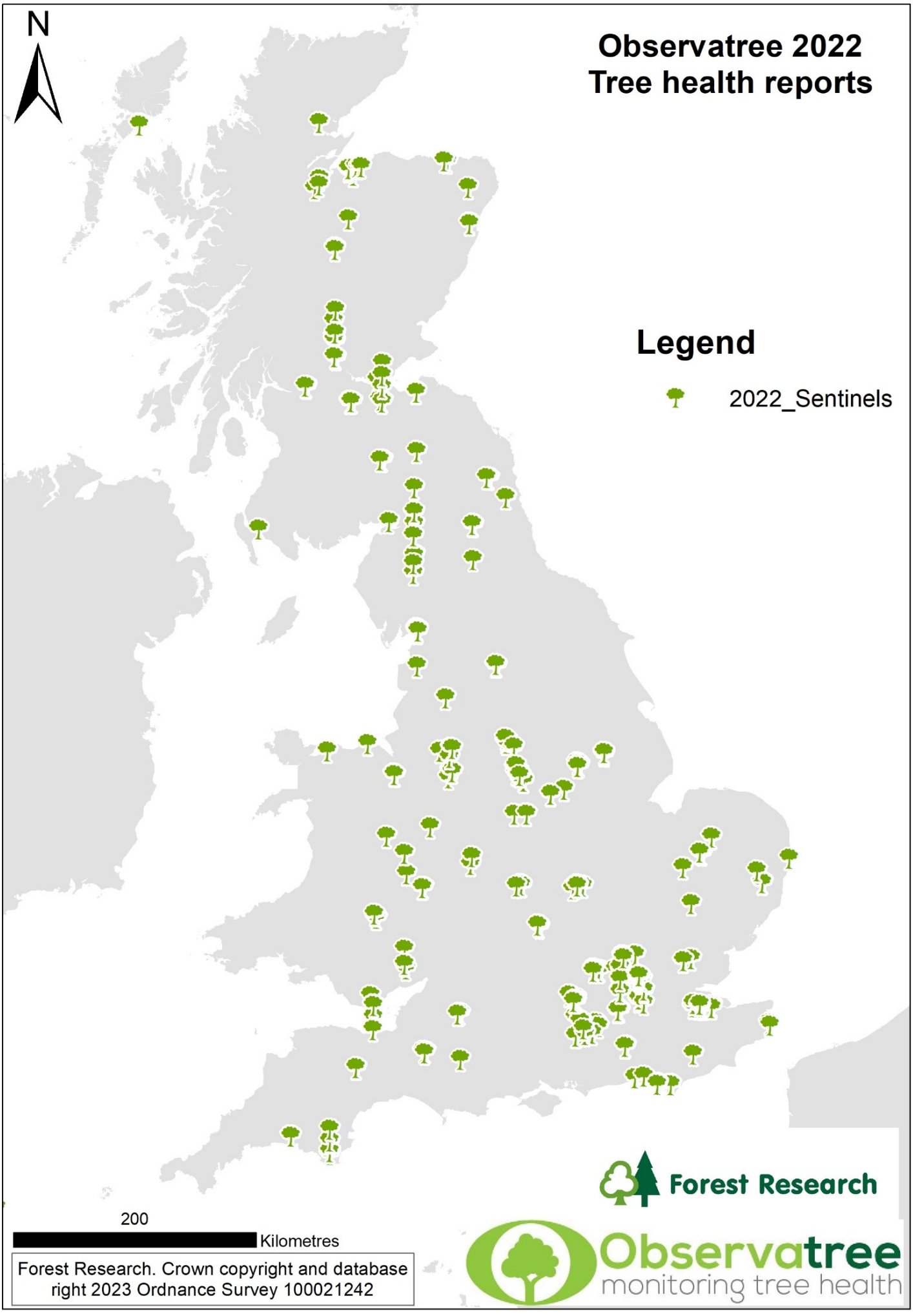


Figure 13. Observatree sentinel trees 2022.

Regional Surveying Activity

Finally, the East Midlands, who have sent in the most surveys since 2018, have been overtaken! South East England have come out top for 2022, although if we look at average reports per volunteer, East Midlands comes top still (Table 1)! The average number per volunteer is such an amazing column to look at, our volunteers have gone above and beyond this year.

Table 1 – Observatree survey reports split by region, survey effort and type of finding.

	Number of volunteers submitting reports	Total number of reports	Average number of reports per volunteer	Number of new priority pests and diseases reported	Number of new other pests and diseases reported	Number of healthy trees	Total number of sentinel reports
East Midlands	13	738	57	21	39	524	565
East of England	8	157	20	10	5	115	105
Greater London	9	301	33	35	10	229	168
NE England	5	119	24	9	19	82	35
Northern Ireland	1	27	27	2	4	21	0
NW England	11	458	42	24	51	364	155
Scotland	17	557	33	47	59	417	244
SE England	28	1257	45	90	122	922	453
SW England	12	343	29	21	44	261	205
Wales	13	368	28	24	33	300	120
West Midlands	10	223	22	14	31	109	109
Yorks & Humber	7	351	50	16	25	304	36
Total	**129**	**4899**		**313**	**442**	**3648**	**2195**

Chalara is the most reported pest or disease for all three regions. Interestingly, acute oak decline and horse chestnut leaf miner was most reported in Wales.

Table 2 – Percentage of the total suspected priority pests and diseases recorded for each country.

Priority Pest or Disease	England (%)	Scotland (%)	Wales (%)	NI (%)
Acute oak decline	5.1	0	8.3	0
Chalara ash dieback	34.9	68.1	54.2	50
Dothistroma needle blight	3	8.5	0	0
Elm zig zag sawfly	9.4	0	0	0

Mountain ash ringspot	2.6	8.5	0	0
Great spruce bark beetle	0.9	0	0	0
Horse chestnut leaf miner	19.1	12.8	20.8	50
Oriental chestnut gall wasp	10.6	0	0	0
Oak processionary moth	14	0	0	0
Sirococcus tsugae	0	2.1	16.7	0
Sweet chestnut blight	0.4	0	0	0

Additional Projects

Woodland Trust OPM Surveys

As part of Obsevatree's response to the oak processionary moth (OPM) outbreak, volunteers in Greater London and the South East are asked each year to survey Woodland Trust sites in the outbreak and buffer zones. We had a great response in 2022, 16 volunteers surveyed 30 sites.

We must say a special thank you to Stephen Middleton, our Lead Volunteer in London, for covering 8 sites!

Alder Surveying in Scotland

This year our volunteers joined researchers from Forest Research and Royal Botanic Gardens Edinburgh to investigate alder decline in Scotland. The researchers were concerned about the condition of alder in Scotland and had funding to conduct a small project to look into potential causes. Observatree volunteers in Scotland were asked to find alder and report on its condition to help the researchers find study sites. 21 surveys were submitted, a huge help, and the researchers will join us in the March webinar to present their results.

Lace Bug Surveys

Our annual oak and plane lace bug surveys also went ahead this year. Oak and plane lace bugs are not known to be present in the UK, however, they are so small we want to make sure! This survey involved putting yellow sticky traps in oak and plane trees for two weeks, then sending them back to Forest Research. This survey had a great response! We received 143 traps, and luckily no lace bugs have been found.

Finally, a massive thank you to all volunteers and partner staff who have contributed to this record-breaking year. What a fantastic result for our trees, woods and forests.