

Welsh Plant Health Surveillance Network: Summary of the 2023 Sampling Season.

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Introduction to the WPHSN

[The Welsh Plant Health Surveillance Network \(WPHSN\)](#) comprises insect and spore traps placed at strategic woodland sites across Wales to monitor and record the presence/absence of invasive pests and pathogens which may negatively affect our trees, woodlands, and forests.

The aims of the WPHSN programme are:

- To assess presence/absence and abundance of invasive tree pests and pathogens across Wales.
- To build a 'real time' map detailing where invasives are detected, which will act both as an early warning system and as a monitoring tool.
- To promote and facilitate collaborative working with external agencies to grow the Network, whereby information and advice can be shared.

The WPHSN programme targets invasive biological threats to trees which have historically been detected in Wales, or which are likely to migrate to Wales with the warming climate.

The 2023 Sampling Programme

Seventy-three specialised traps were deployed across Wales in 2023 in a J-shaped arrangement; 67 to detect the presence/absence of invasive insects, and six for the detection of fungal pathogens. The biological samples obtained were analysed by the Forest Research team in Wales and Tree Health Diagnostic and Advisory Service (THDAS) laboratory staff based at Alice Holt in Surrey and the Northern Research Station in Midlothian. To ensure adequate coverage of the geographical area and

the sharing of information and advice within the sector, the surveillance network includes sites managed by Natural Resources Wales (NRW) as well as privately managed estates through collaboration with external organisations and the Sentinel Site network.

Data collected in the WPHSN are being used to inform the development of priority goals and policies relating to woodland management across Wales.

The biological samples taken during the WPHSN trapping programme in 2023 show a presence at low level of [the large larch bark beetle](#) (*Ips cembrae*), one of the organisms of particular interest. Whilst *Ips cembrae* is not a primary pest, it is a secondary pest, and it will be prudent to continue to monitor the presence of this insect across Wales.

It is reassuring that 2023 trap samples suggest the current absence from Wales of [Ips typographus](#), [oak processionary moth](#), [the emerald ash borer](#), and *Monochamus alternatus* (a vector of [the pine wood nematode](#)). It is worth noting that other species of note, but not of concern, were present in the samples taken from the insect traps in 2023 which helps to confirm that the pheromone lures were working as intended.

The spore traps in 2023 provided a general overview of the composition of fungal airborne spore inoculum, and were used to refine methods for future automated laboratory identification to species level. No untoward or unexpected findings of fungal pathogens were recorded during the 2023 sampling season.

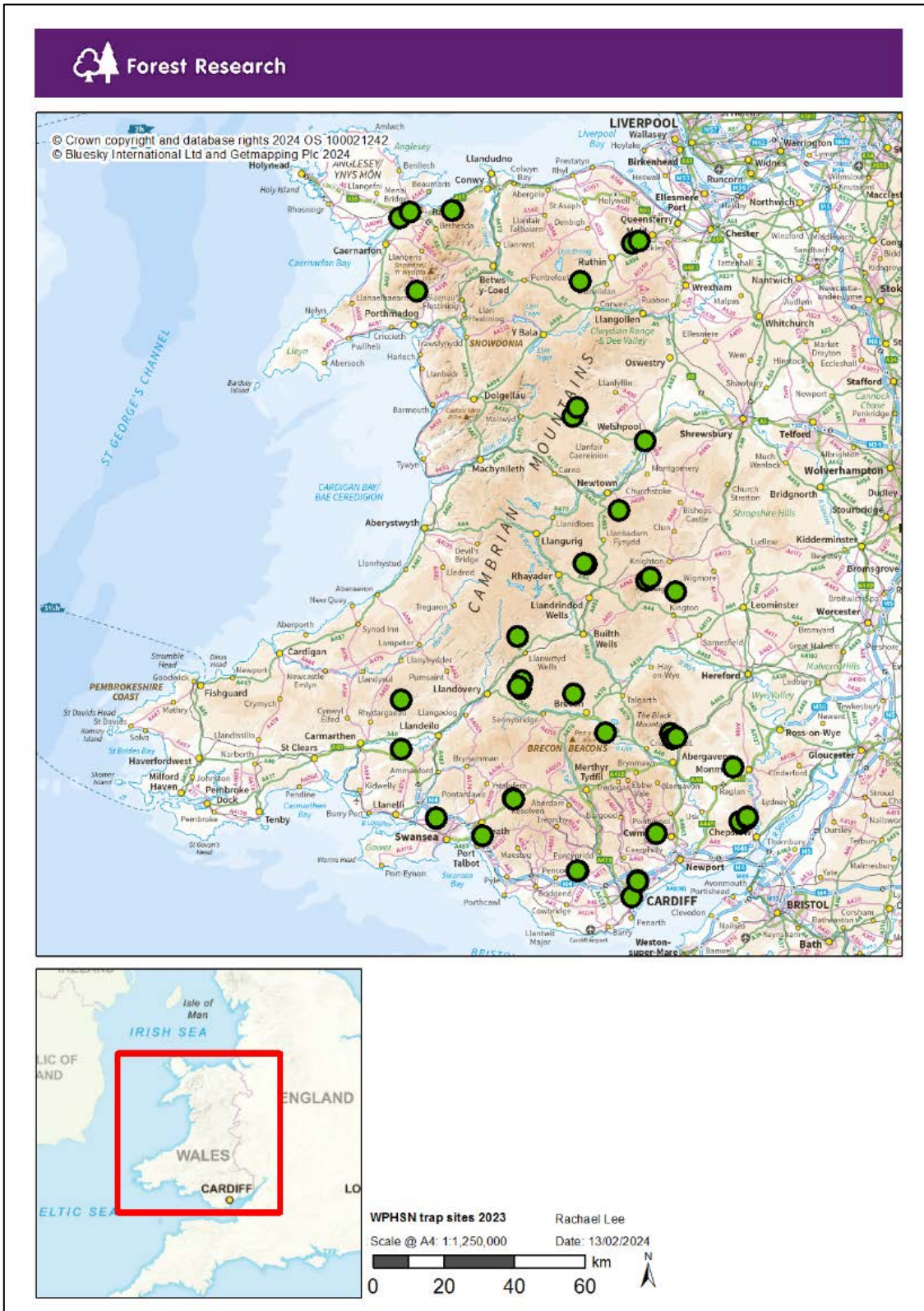


Figure 1: Map of Wales illustrating the augmented 'J' formation used for the WPHSN trap locations in 2023.



Figure 2: Setup of rotor arm trap and data logger for the monitoring of temperature and humidity at a WPHSN site. The data logger is enclosed in a white radiation screen to shield it from rain and direct solar radiation and the rotor arm trap is powered by a 12V battery..



Figure 3: An infographic illustrating the different organisations working in collaboration with the WPHSN Project.