

Ips typographus update 2025 season

Jason Sumner-Kalkun (Entomology Response Manager – Maternity Cover)

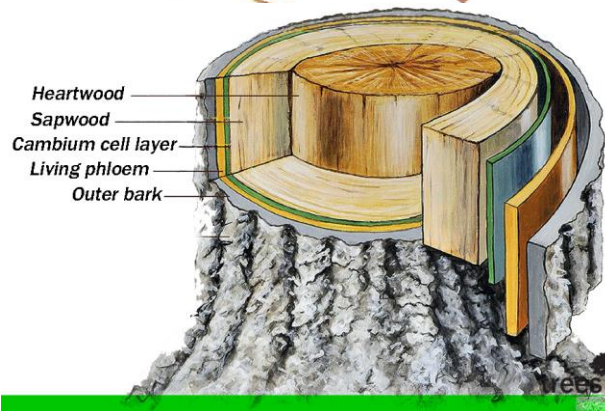
Forest Research





Ips biology

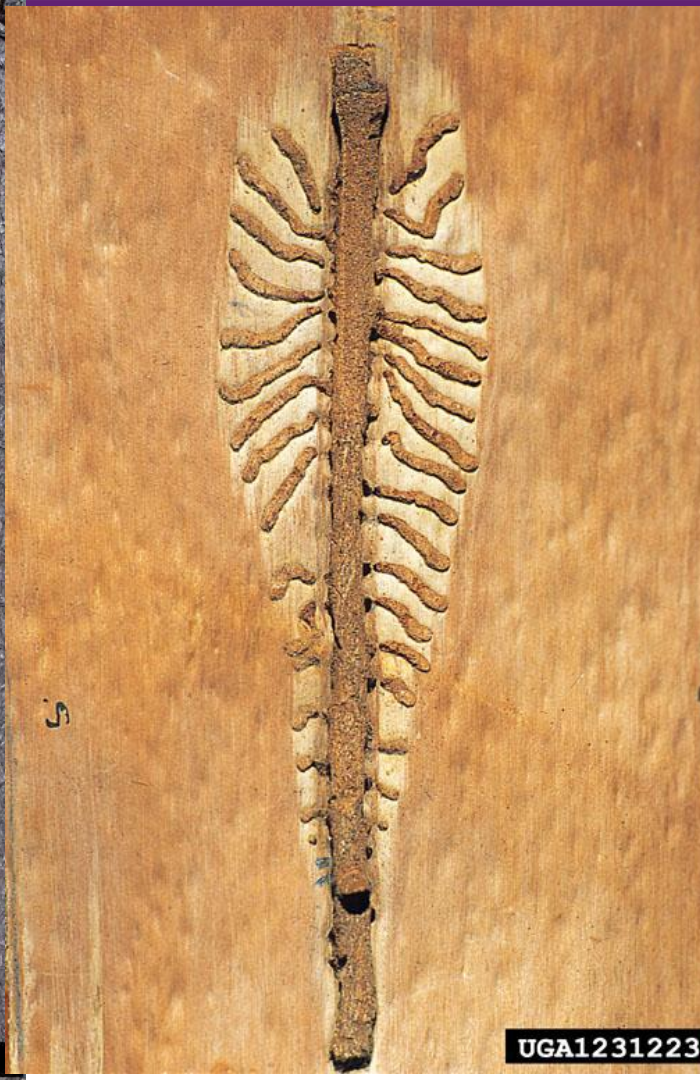
Ips typographus



- Family: Curculionidae
- Subfamily: Scolytinae
- Eight-toothed Spruce Bark Beetle
- Elytral declivity + tooth-like spines
- Feed on phloem layer of tree bark
- Feeds on Spruce species (*Picea spp.*)
- Regulated quarantine pest in UK



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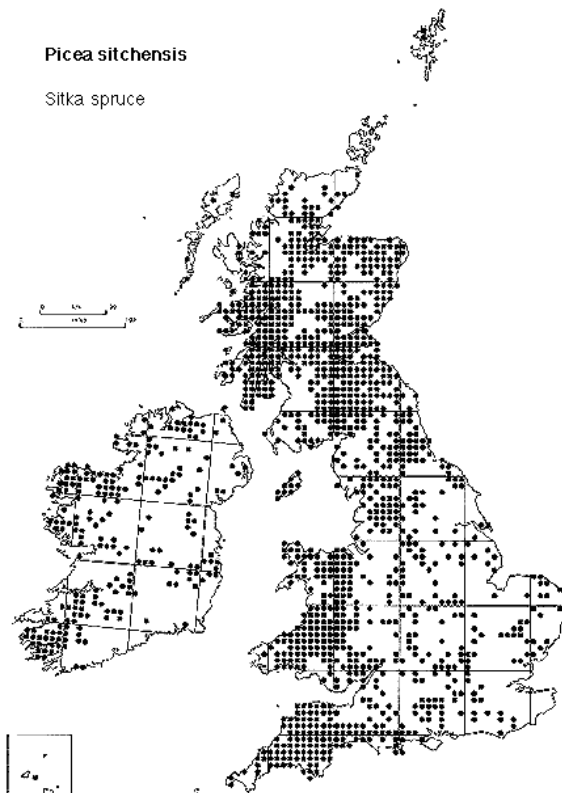


Artvin Forest – Turkey

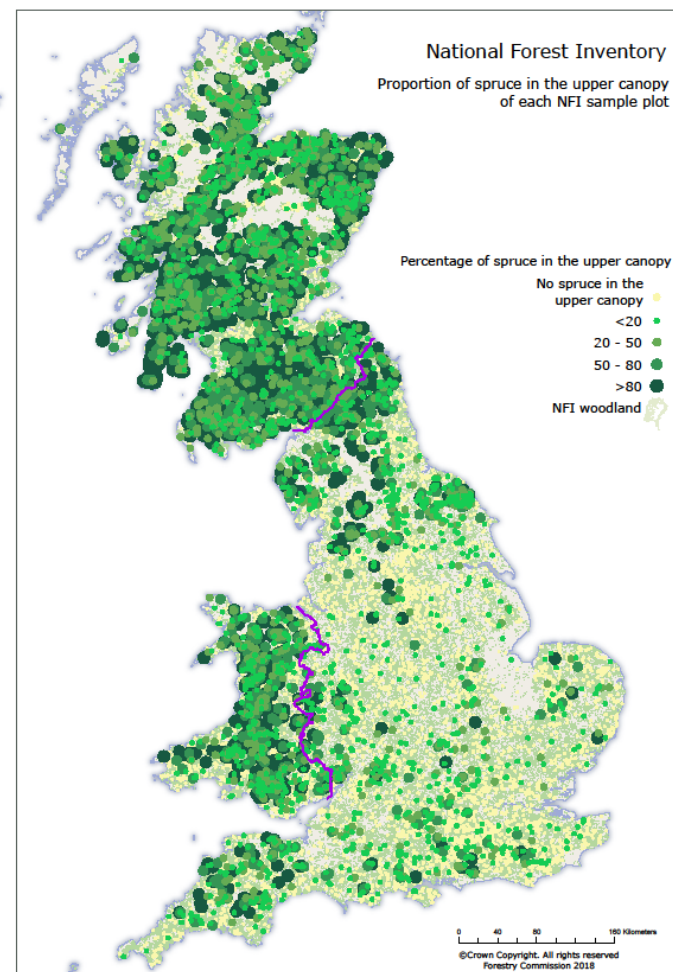
100 million *Ips typographus*

Vysočina Region, Czech Republic Aug 2019





- Sitka spruce is the UK's third largest crop by area.
- It has significant economic benefits, accounting for half of the UK's £2bn a year forest industry.
- Mostly Sitka Spruce
- Norway Spruce more prevalent in South East of England



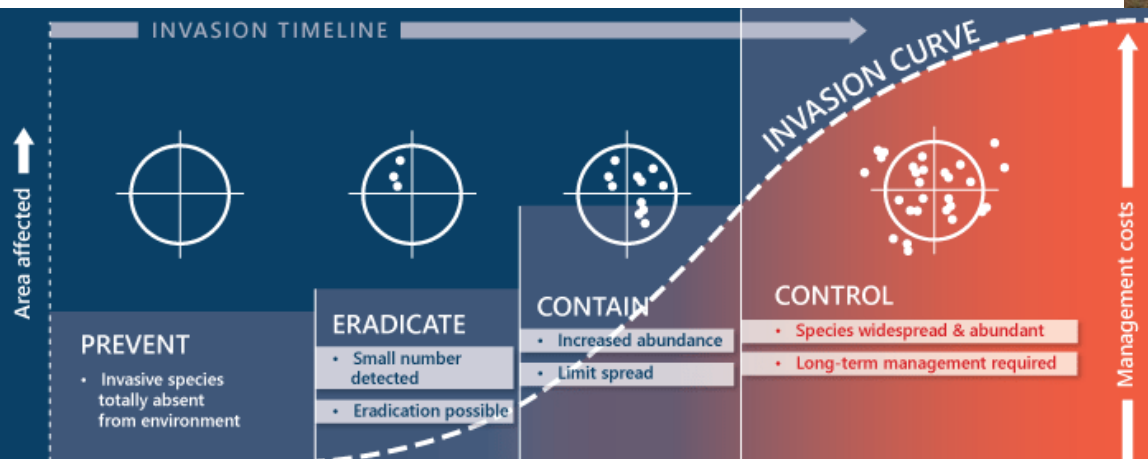
History of Ips in the UK: Changing Management Approaches 2018 -present

Beetles found in routine monitoring for *Ips* on billet traps

Site clearfelled, whole-tree chipping, stumps cut low, brash burned, dense network of traps for three years minimum

Ips typographus fully eradicated no evidence of persistence locally or surrounding 100km after intensive surveys

Pheromone traps set-up and suggest alternate incursion events



32 traps set up in 2019, revised after *Ips typographus* caught in traps in the south east, and revised repeatedly each year

Now up to over 140 Wider Environment traps across GB (2025)

Initial justification for traps was to search for 'missed' establishments

Following captures of beetles in spring 2019, additional traps set up and surveys triggered

10+ *Ips typographus* in a trap sample triggers a ground survey over summer, plus follow up when dismantled in winter





"Movement of beetles in wood and wood products in trade is the main pathway for long distance dispersal, evidenced by interceptions of all the PZ *Ips* species in various countries globally." Evans 2018

"Adult *Ips typographus* beetles can fly up to 4km in search of suitable host material, and can also be transported by abiotic factors such as wind. Dispersal over longer distances depends on transportation under the bark of logs. It is one of the most commonly detected pests travelling on solid wood packaging." *Ips typographus* contingency plan 2015

Journal of Pest Science
<https://doi.org/10.1007/s10340-024-01763-4>

ORIGINAL PAPER



Evidence of cross-channel dispersal into England of the forest pest *Ips typographus*

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Received: 18 August 2023 / Revised: 26 January 2024 / Accepted: 14 February 2024
 © Crown 2024

UPDATE: Flights up to 300km can occur when assisted by wind!!!



The Demarcated Area

- Restrictions on the movement and processing of Spruce trees originating within this area
- Notify when intending to fell spruce
- Proactive spruce removal
- Heightened surveillance
- Grants available to help with felling spruce
- Aim is eradication of *Ips typographus* from GB

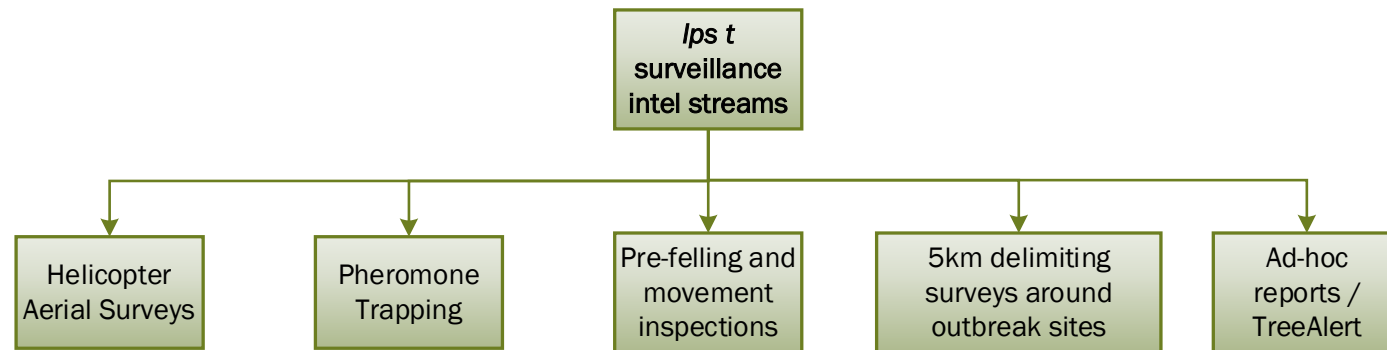




- Sitka not widely planted in Europe
- First finding in the UK in the field Sep 2024
- Confirms ability of *Ips typographus* to colonise Sitka under UK field conditions
- In felled harvesting residue, ideal for *Ips* colonisation
- Sitka more common in Wales and Scotland



Surveillance for *Ips* *typographus*



B B C

NEWS



BBC NEWS

Tracking the Bark Beetle across the UK

Drones join battle against eight-toothed beetle threatening forests



Justin Rowlatt

August 2025

...our fingernail, but this hairy beetle is one of the biggest UK's forests.

...been the scourge of Europe, killing millions of spruce. The government thought it could halt its spread to the UK by stopping wood products at ports.

...entry route of choice - they were being carried on winds from the English Channel.

Now, UK government scientists have been fighting back, with an unusual arsenal including sniffer dogs, drones and nuclear waste models.

They claim the UK has eradicated the beetle from at risk areas in the east and south east. But climate change could make the job even harder in the future.

Forestry Commission extends beetle pest controls July 2024



Katy Prickett
BBC News, England

Spruce tree planting ban over beetle pest fears



Helen Burchell
BBC News, England

9 October 2024

October 2024



- Multiple *Ips typographus* specific trapping networks across GB
- Covering spruce in south east England, higher density within the DMA but good coverage outside the DMA in important spruce areas
- Trapping networks for Wales and Scotland also set-up
- Stewardship science network covering areas of private woodland

- Network of *Ips typographus* pheromone traps across the UK to monitor where beetles are flying
- Samples taken once every two weeks during the flight season (April – October)
- Samples processed rapidly
- Traps with 10+ *Ips typographus* trigger follow-up (inside DMA)
- All traps catching at least 1 *Ips typographus* (outside DMA)
- Integrated field visit with other trapping networks (e.g., FTN)



Completed

- 50+ Field Surveys Completed by FR
- 1381 Wider Environment Samples processed (from England)

In progress

- Up to 30 more field surveys planned
- c. 6870+ ER Samples to process



Please note figures have been removed from these slides for sensitivity issues

- Numbers of beetles caught in WE not increasing exponentially as would be expected with internal spread
- Numbers are tiny compared to e.g. Germany 30,000+ per trap per year (157 traps) (Potterf et al. 2025)
- Numbers of beetles caught in traps generally are low on average, and the averages are even lower when comparing traps located within the DMA vs outside the DMA



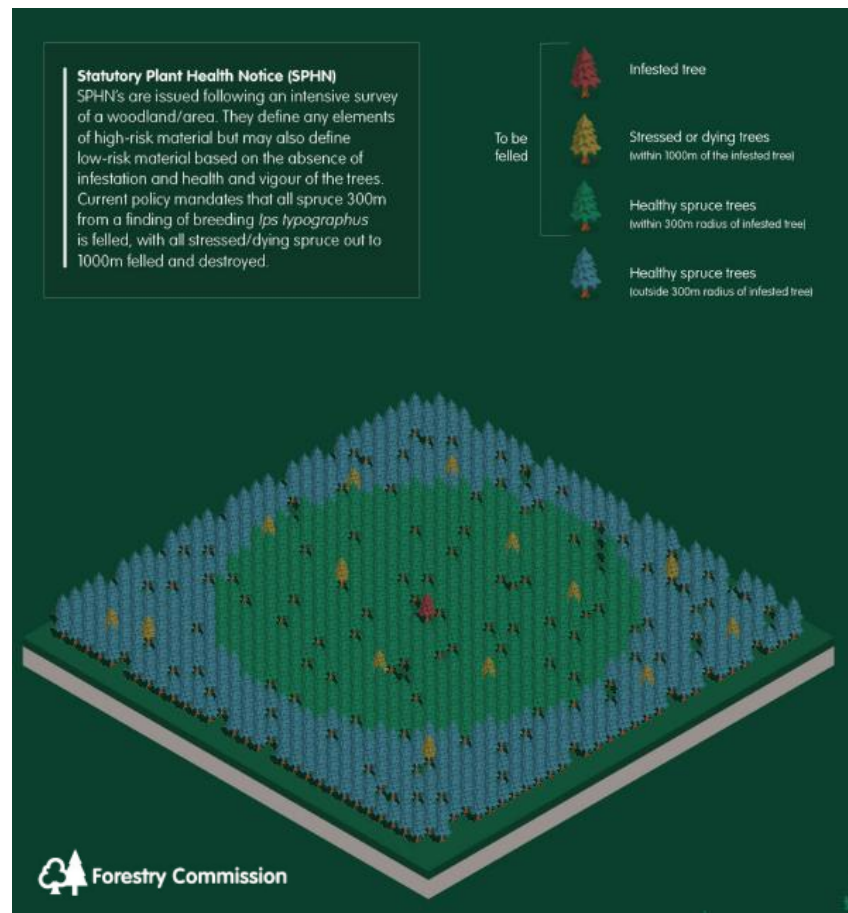
Eradication

Where we find breeding populations:

- Mostly small compartments of **under-managed / never managed spruce** planted in unsuitable conditions: heavy clays in the Southeast, sandy soils in East Anglia
- Soil conditions that are prone to **waterlogging** in the winter and **drought** in the summer
- We mostly find Ips on windblow or recently standing dead trees – **we have never found Ips breeding on a healthy tree** – the population levels are far too low in England for mass attack events to occur
- The vast majority of sites we survey that have susceptible spruce material **do not contain Ips.**
- **During 2024-25 season, only 2.4% of target surveillance sites inspected had Ips infestations**



- Aim to break the lifecycle and remove establishments
- Statutory Plant Health Notice (SPHN) issued to landowner by Forestry Commission
- All Spruce within a 300m radius from a finding is felled
- All stressed / dying Spruce within 1km radius felled and destroyed
- High risk material over 8cm diameter must be chipped to G50 or burned



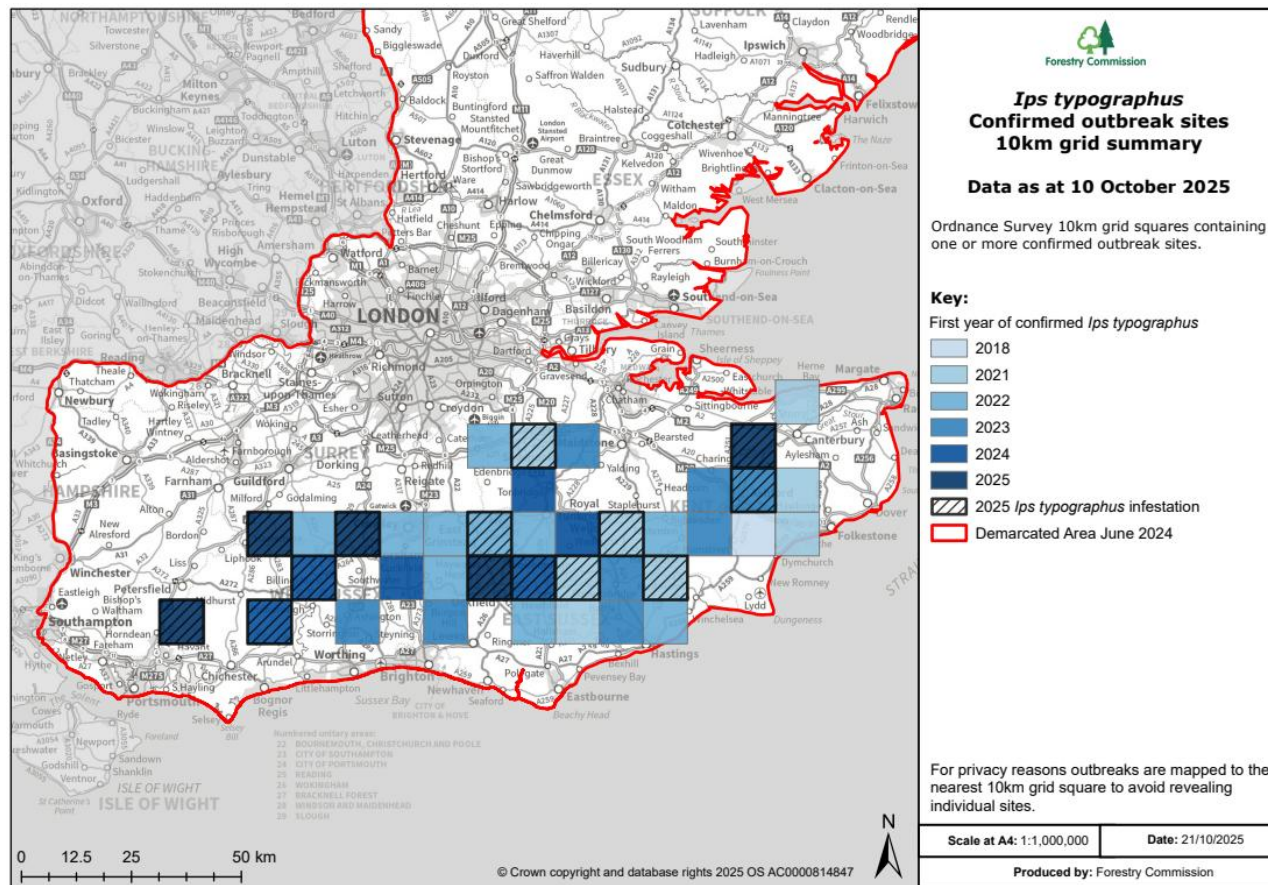
- Once SPHN felling completed, network of traps set out across the site to soak up any remaining beetles 50 -100m apart
- Eradication traps remain in place for 3 years
- Samples are collected once every two weeks during the flight season (April – October)
- **Approach effective** – used in 2018 outbreak which is officially eradicated and 13x 2021 sites all deemed free of breeding *Ips typographus* a further 16 sites under review

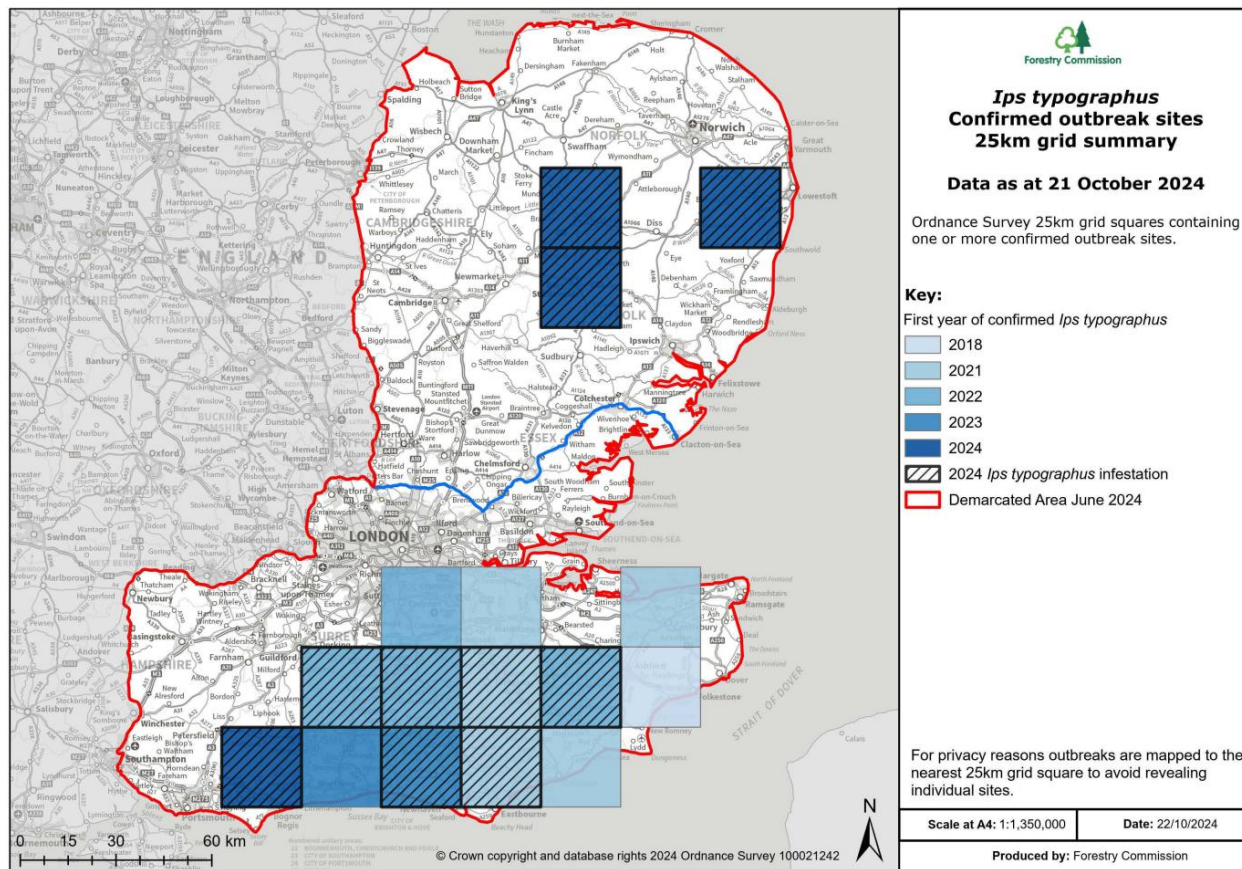


Eradication Successes

- Comparing eradication trap catches vs. proximal Wider Environment traps catches (within 20km)
- Differences between WE traps vs. ER trap
- Significantly less beetles in ER traps vs WE traps
- Larger differences in yr 2 and 3 of trapping
- Site walkovers confirm no persistent populations
- 13 sites declared eradication
- 16 sites on track for eradication by end of 2025







New tools for *Ips* management

Department
for Environment,
Food & Rural Affairs



SYLVIA
FOUNDATION

lps project

- 50 woodland managers / landowners took part April – October 2024
- Hosting and servicing a pheromone trap in their woodland
- Sending samples by post once every two weeks
- Increased coverage across UK and engagement with private forests
- Recruitment in late summer 2025 to expand network for 2026

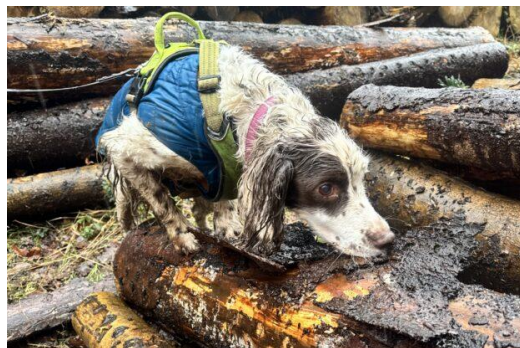


- Can continental blow-over explain trap findings?
- UK Met Office NAME atmospheric dispersion model used to assess wind plume direction against peak trap findings and beetle flying temperature thresholds
- Used to see if findings outside of DMA could have been blown from Belgium
- Being developed into risk maps for potential incursion of *Ips typographus* via wind-assisted dispersal from mainland Europe, to support surveillance activity and policy decisions. University of Cambridge (Dr Cerian Webb)

- Removing bark from felled and converted timber disrupts bark beetle feeding, shelter and breeding.
- Investigating bark removal using four-wheel drive harvester head
- Data gathered to help inform future methods and equipment choice
- Initial tests show most techniques using the four-wheel drive head did not provide sufficient de-barking
- Plan to test two-wheel drive heads to provide rotation of stem through the de-barking head



- FPPH Detection dog training project – for finding *Ips* in roadside lumber
- Can detect live *Ips* vs other common bark beetles
- Could improve speed and accuracy of log stack inspections and movement authorisations. Validation ongoing



Department
for Environment,
Food & Rural Affairs



Lead: Anna Platoni



Video credit:
Rachael Flavell
(Dog Handler)

AI machine learning model development and training to ID *Ips* beetles in trap catches

Speed up analysis and processing of 1000s of pheromone trap samples



**Innovate
UK**

Prediction Image

- *Ips* remote sensing pheromone trap equipped with camera to image trap catches
- Image sent to be analysed by ML algorithm for early warning of *Ips* in traps
- Better time resolution, leading to better understanding of *Ips* distribution/ spread and more timely management



Max Blake, Sarah Facey, Anna Platoni, Imogen Cavadino-Phillips, Owen Vaughan, Mark Bridges, Ruth Carter Nigel Straw, Thomas Kendall, Venkatesh Vemulapati, Molly Davidson, Rebekah Whitaker, Gemma McDonald, Barley-Rose Collier-Harris, Andrei Manea, Talor Whitham, Alicia Theissen, Miranda Burke & Patrycja Lackowska for field and lab work

Anna Brown, Nick Hazlitt, Lisa Smith, Will Tomkins, Daegan Inward, Katy Dainton, Hugh Evans, Katy Reed, Helen Carter, Dave Williams, Ben Jones, Andrea Deol, Andy Hall & Nick Fielding for discussions and advice

FC Tree and Plant Health, especially Fred Toft & Phil McGovern, for surveying and leading the groundwork on *Ips*

The FC contractor teams for doing the hard work, DEFRA for legislative support and funding

More info: [Larger eight-toothed European spruce bark beetle - Ips typographus - Forest Research](#)

Report suspicious trees: [TreeAlert - Forest Research](#)

Read more about our *Ips* management work: ['Behind the Scenes' at the Forestry Commission: Managing Ips typographus..... five years on – Forestry Commission \(blog.gov.uk\)](#)