

The Large Pine Weevil (*Hylobius abietis*) recent challenges and opportunities to develop integrated pest control in the UK

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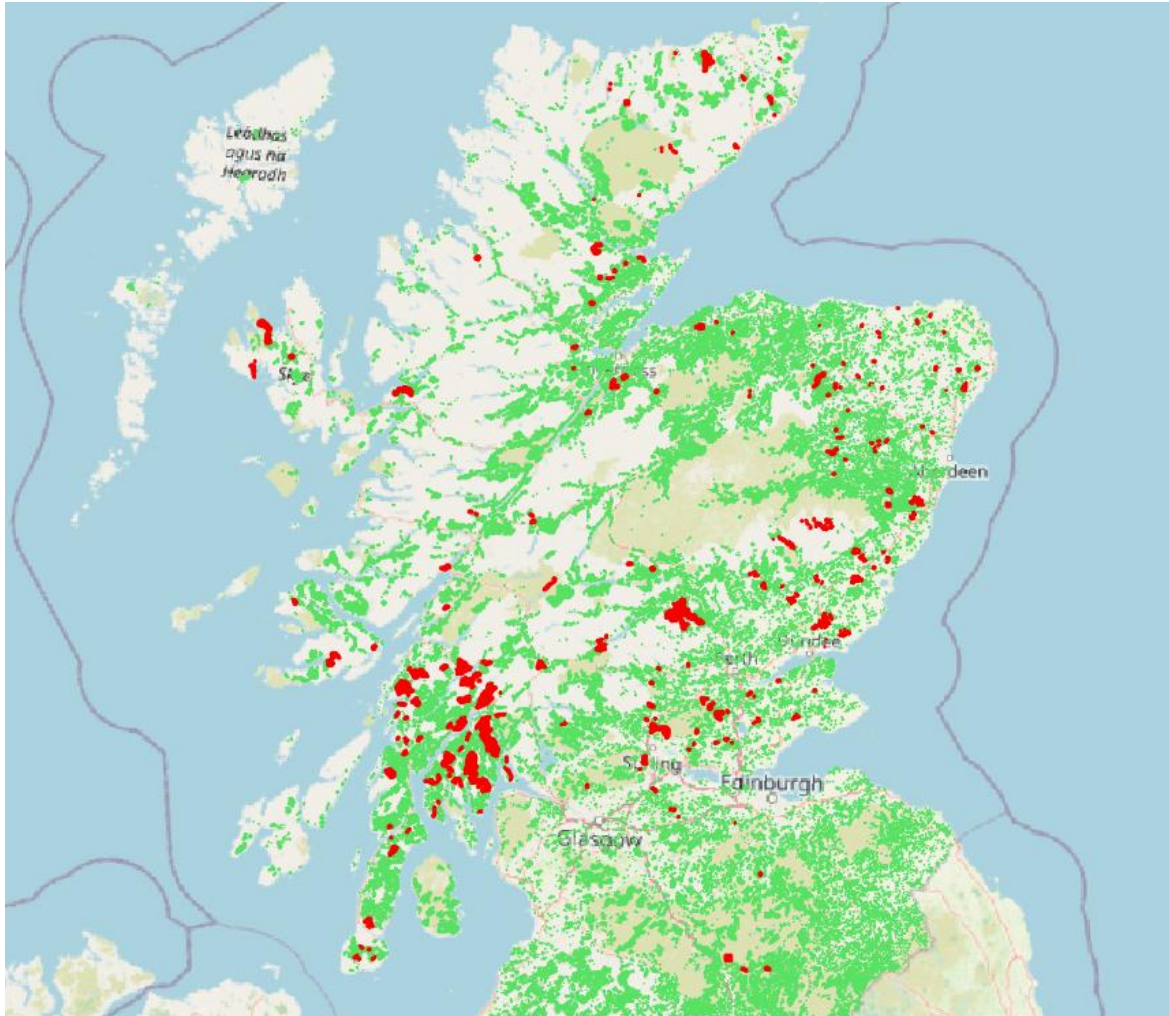
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Presented by Dr Kate Palmer, Technical and Industry Support Manager, Confor

1. Background – the UK forest industry and impact of the Large Pine Weevil



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	Scotland	UK
Woodland cover (ha)	1,510,000	3,280,000
% Conifer	71%	48%
Conifer cover (ha)	1,072,100	1,574,400
% Certified	85%	91%
% Conifer under 60 years	93%	90%
% main timber species	85%	75%
Estimated Productive area (ha)	847,495	1,062,720
Round wood production	5,000,000	9,900,000
Estimated average annual felling area	14,000	21,000
% Area cut	2%	2%
Vulnerable RP area <6yrs (ha)	70,000	105,000
Value (£5k/ha)	£350,000,000	£525,000,000
Estimated current average annual Weevil cost (treatment + tree replacement = £320/ha)	£22,400,000	£33,600,000

1. Background – the UK forest industry and impact of the Large Pine Weevil



2. The Hylobius Industry Research Partnership (HIRP)

- Formed in 2009
- Cross-industry representation of research, academia, practitioners, state and private sector stakeholders and growers.
- Confor, Forest Research, larger private UK forest management companies, Forestry England, Forest & Land Scotland, Coillte (Ireland forest service), Daera (Northern Ireland forest service), NRW (Wales forest service), Confor nursery group, Scottish Forestry Trust.

2. The Hylobius Industry Research Partnership (HIRP)

Aims:

- In the short/medium term to expand the range of options available for managers to address the threat of *Hylobius abietis* and in the medium/long-term move to a more integrated approach to *Hylobius abietis* management.
- Ultimately, to remove *Hylobius abietis* as a limiting factor to the re-establishment of productive conifers – with an aspiration for this to be achieved by management no longer reliant on application of pesticides.

2. Track Record – the Hylobius Industry Research Partnership.

Opportunities: scoped six priorities over five years (2017-2022 +3yrs Covid):

1. Develop an improved predictive *Hylobius abietis* population model.
2. Create a regularly updated guide on *Hylobius abietis* integrated pest management for use by all stakeholders.
3. Develop alternatives to chemicals that work in areas of high *Hylobius abietis* population, including physical barrier products.
4. Develop a viable biocontrol option – using insect pathogenic organisms such as fungi and nematodes that prey on and kill *Hylobius abietis*.
5. Using tree genetics to identify resistance characteristics in SS with a view to breeding more resistant planting stock.
6. Identify a range of alternative, weather resistant, non-neonicotinoid pesticides, that have low environmental impact, and that might be used as a last resort if other methods on non-chemical protection fail.

2. The Hylobius Industry Research Partnership (HIRP)

Track record:

- 2017 – first Research Catalogue detailing 24 different research projects.
- 2018-2019 – “Can Do” Innovation Fund – remote camera detection unit and trial of lure and kill traps
- 2019 – Hylobius Management Support System (HMSS) refined and developed.
- 2020 – alternative biopesticides trialled. **Covid**
- 2019-2021 – Neonicitinoid pesticide (Corragen) trialled and approved for use
- 2022 - 1st HIRP conference
- 2024 – Neonicitinoids banned, leaving Cypermethrin
- 2025 – Chlorantraniliprole (Lanzarta) receives emergency approval
– 2nd HIRP conference

3. Challenges – overcoming inertia and intransigence.

- Historic dominance of Forest Research
 - Effective pesticides have been banned
 - Vested interests – nurseries, timber growers, managers, processors, Regulators, environmental and community stakeholders.
 - Climate change – milder, wetter winters & hotter, drier summers
 - Pests/diseases – patterns and pressures evolving
 - Alternative options currently unproven and untested at commercial scale or in combination.
- We have a chasm to cross which requires a bold leap (not small, short steps).
=> TPIF bid

4. Opportunities – to collaborate and develop practical, cost-effective alternatives.

Population Prediction:

Continue development of an improved predictive *Hylobius abietis* population model, appropriate for use in all forest situations:

- HMSS has been developed, published and is in use, but requires ongoing deployment, monitoring, evaluation and updates.
- Some stakeholders uncertain of value – offers no guarantees (unlike spraying pesticides)
- Originally relied on billet traps (costly to deploy) - potential for remote camera billet traps?
- Requires engaging and cooperating with neighbouring forests.
- Predicted to require Regulatory input – pesticide use should be the last line of defence, not the first.

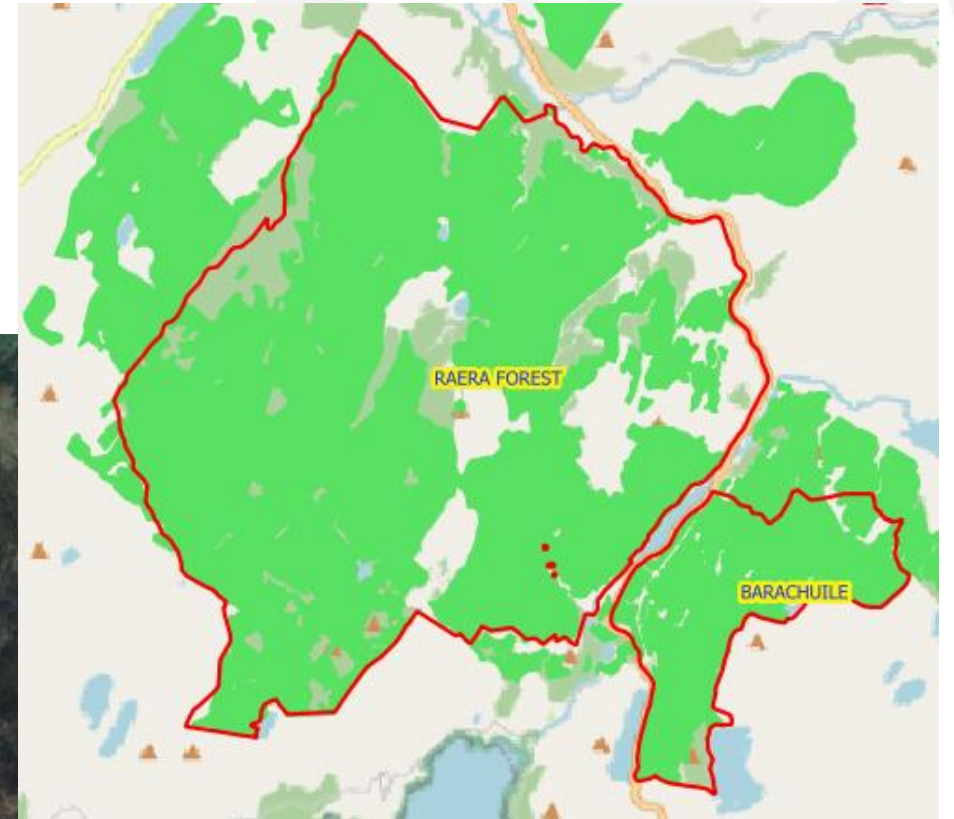
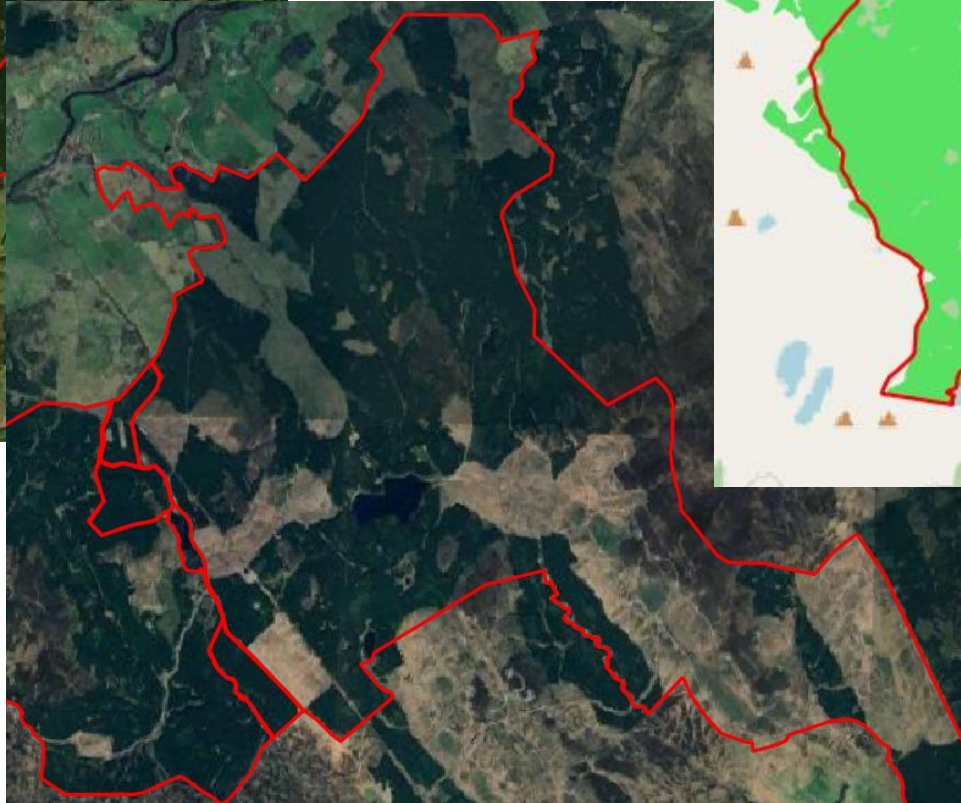
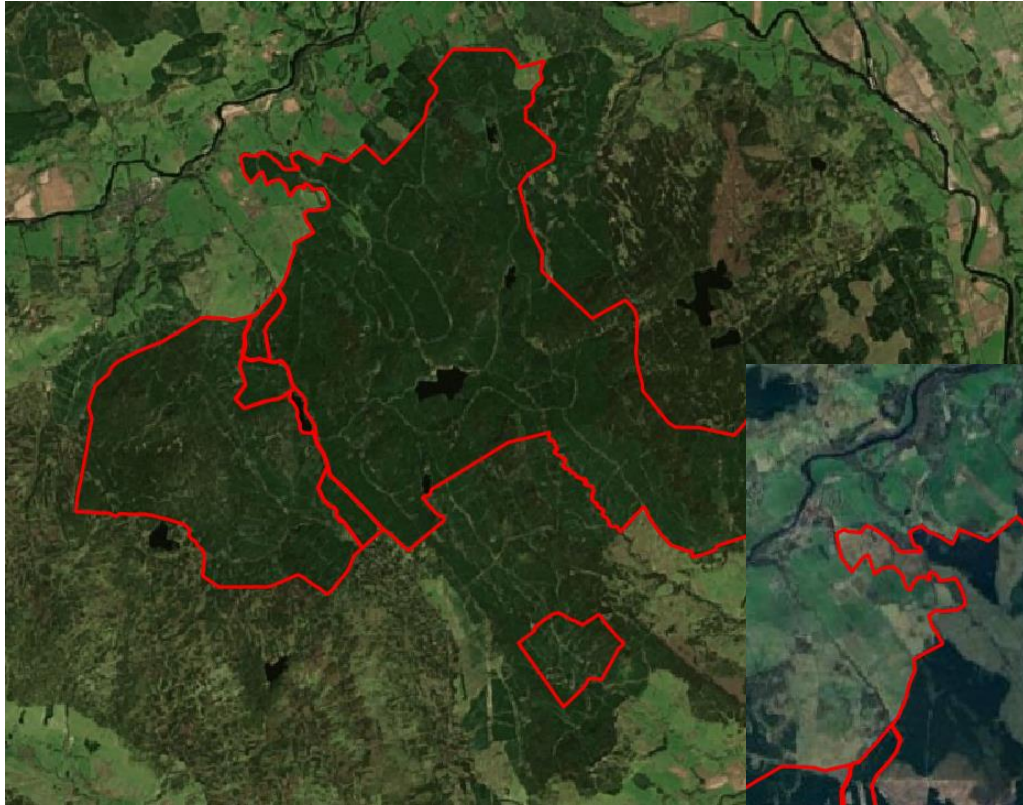
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Cost-Benefit Analysis:

How best to combine approaches effectively at a landscape scale?

Discounted cash flows, comparing treatment options and regimes to 5 years of fallow?

4. Opportunities – to collaborate and develop practical, cost-effective alternatives.



5. Next Steps – for research, industry and Regulators

TPIF bid unsuccessful, so:

1. HIRP panel to review product options and complete a cost/benefit analysis (which horses to back?)
2. Instigate initial trials for most promising options, using SFT funds - currently £30k/yr x 5 yrs has been committed (back the favourites).
3. Secure additional and more substantial research funding to properly test suitable products, continue to refine the HMSS using camera traps, develop a ground-truthed IPMS.
4. Engage with academia, researchers, practitioners, Regulators and stakeholders to build consensus and support (financial and moral).
5. Continue selective breeding to promote favourable insect resistant traits.

Questions

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