



## TREE MICRO-ECOLOGY: PERCEPTIONS OF DISEASE & DECAY IN TREES

*Interpreting the Significance of Factors Affecting Tree Structure & Health.*

(Southern Venue) 23 & 24 May 2005: **Richmond Park, Pembroke Lodge**  
(Northern Venue) 26 & 27 May 2005: **Fountains Abbey, Ripon, North Yorkshire**

### Day 1

- Reviewing the context and influences from Europe & US
- Introduction to the micro-ecology of the soil-root environment: definitions; co-evolution & disease management
- Device-based structural tree assessment: advantages, limitations & opportunities

9.00 am	Registration and coffee	
9.30 – 9.35 am	Welcome to Richmond Park / Fountains Abbey	
9.35 – 9.45 am	Introduction to speakers & seminar series	Neville Fay
9.45 – 11.15 am	<b>Overview of the Relationships in Vascular, Root &amp; Soil Environments:</b> <ul style="list-style-type: none"> <li>• <u>Colonisation v Pathogenicity</u>: Factors affecting pathogenicity in roots of selected fungi.</li> <li>• <u>Colonisation v Invasion</u>: The positive role of ‘pathogens’ &amp; factors that influence vascular colonisation &amp; tree health.</li> <li>• <u>Threshold Values</u>: Measuring microbial &amp; micronutrient status.</li> <li>• <u>Living-soil &amp; tree-fungi interaction</u>: Manipulating factors to re-establish health and condition.</li> </ul>	Olaf Ribeiro USA
11.15 – 11.45 am	Coffee	
11.45 – 1.15 pm	<b>Overview of Procedures &amp; Techniques for Assessing Tree Failure:</b> <ul style="list-style-type: none"> <li>• <u>Available Decay Detection Devices &amp; Description of Technologies</u>: Tree pulling, micro-drill, impulse-hammer, ultrasound, acoustic, magnetic resonance &amp; thermal tomography.</li> <li>• <u>Advantages &amp; Disadvantages</u>: Potential limitations of varying devices and the importance of interpretive skills.</li> </ul>	Ed Hayes USA
1.00 – 2.15 pm	Lunch	
2.15 – 3.30 pm	<b>Thermal Imaging (1)</b> <ul style="list-style-type: none"> <li>• <u>Introduction to the theory</u>: Measurement of differential surface temperature in trees and its application to decay detection.</li> <li>• <u>The Infrared Camera</u>: The use of the hand-held infrared (IR) camera &amp; the interpretation of results.</li> </ul>	Giorgio Catena Italy
3.30 – 4.00 pm	Coffee	
4.00 – 4.45 pm	<b>Thermal Imaging (2)</b> <ul style="list-style-type: none"> <li>• <u>Demonstration of Use in Field</u>: Outdoor onsite demonstration, followed by discussion.</li> </ul>	Giorgio Catena Italy
4.45 – 5.15 pm.	<b>General Discussion:</b> Question & Answer Session	Led by David Lonsdale
5.15 – 6.15 pm	Coffee & Food	
6.15 – 7.30 pm	<b>Towards a UK Tree Condition Survey</b> <ul style="list-style-type: none"> <li>• <u>The Experience of the Tree Condition Surveys: Benefits &amp; Limitations</u> The Condition Survey of Non-Woodland Trees Evidence from the Modes of Failure records</li> <li>• <u>The Need for a UK Tree Failure Database</u> Optimisation of failure event recording &amp; the type of data to be recorded</li> </ul>	David Lonsdale



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### Day 2

**Deepening the level of understanding decay, disease & remediation potential.**

9am	Coffee	
9.20 – 9.30 am	Review of previous day and introduction to programme of the day	Neville Fay
9.30 – 11.00 am	<b>The Dynamics of the Tree-Fungi System (1)</b> <ul style="list-style-type: none"> <li>• <u>The Parameters Used for Soil Analysis</u>: Towards and understanding of the factors to be considered in defining root &amp; soil health.</li> <li>• <u>Abiotic Tree Stress Factors</u>: Root injury secretions and chemotaxis.</li> <li>• <u>The Phytophthora Experience (USA)</u>: Creating suitable conditions for disease and associated precursors to Phytophthora infection.</li> </ul>	Olaf Ribeiro
11.00 – 11.30 am	Coffee	
11.30 – 12.30 pm	<b>Tree Failure Analysis</b> <ul style="list-style-type: none"> <li>• <u>Sudden Branch Drop</u>: An investigation into its causes from survey of opinion in the USA.</li> <li>• <u>Tree Failure Database</u>: The importance of collating tree failure reports to inform understanding of tree hazard &amp; risk.</li> </ul>	Ed Hayes
12.30 – 1.30 pm	<b>The Dynamics of the Tree-Fungi System (2)</b> <ul style="list-style-type: none"> <li>• <u>Soil Modification</u>: Composts, humates &amp; manures.</li> <li>• <u>Enhancing the Presence of Beneficial Microbes</u>: Manipulating species antagonistic to pathogens.</li> </ul>	Olaf Ribeiro
1.30 – 2.30 pm	Lunch	
2.30 – 3.15 pm	<b>Thermal Imaging (3)</b> <ul style="list-style-type: none"> <li>• <u>Hazard &amp; Habitat</u>: Consideration of IR technology for decay habitat assessment.</li> <li>• <u>Case History &amp; Potential for Future Development</u>: Use for rapid tree hazard assessment.</li> <li>• <u>Types of Wood Decay</u>: Can thermal imaging detect types of wood decay?</li> </ul>	Giorgio Catena
3.15 – 4.15 pm	<b>Workshop Session (Part 1)</b> <ul style="list-style-type: none"> <li>• <u>Discussion Groups</u>: Four rotating groups giving delegates the opportunity to spend time in discussion with individual speakers. This may involve spending time in the field where appropriate/weather permitting.</li> </ul>	All speakers
4.15 – 4.45 pm	Coffee	
4.45 – 5.30 pm.	<b>Workshop Session (Part 2)</b> <ul style="list-style-type: none"> <li>• General Discussion</li> <li>• Conclusions</li> </ul>	Led by David Lonsdale All speakers
5.30 – 5.45 pm	Summary of proceedings Future developments	Neville Fay
5.45 pm	Coffee & Depart	

