



**HAL**  
open science

## **Tree-related Microhabitat co-occurrences: towards easier monitoring?**

Laurent Larrieu, Alain Cabanettes, Benoit Courbaud, Goulard Michel, Wilfried Heintz, Daniel Kraus, Thibault Lachat, Sylvie Ladet, Jörg Müller, Yoan Paillet, et al.

### ► To cite this version:

Laurent Larrieu, Alain Cabanettes, Benoit Courbaud, Goulard Michel, Wilfried Heintz, et al.. Tree-related Microhabitat co-occurrences: towards easier monitoring?. 25. IUFRO world congress 2019, Sep 2019, Curitiba, Brazil. Pesquisa Florestal Brasileira, 39, 770 p., 2019, XXV IUFRO World Congress, 29 sept - 5 October 2019: Forest Research and Cooperation for Sustainable Development. hal-02737291

**HAL Id: hal-02737291**

**<https://hal.inrae.fr/hal-02737291>**

Submitted on 2 Jun 2020

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

# Tree-related Microhabitat co-occurrences: towards easier monitoring?

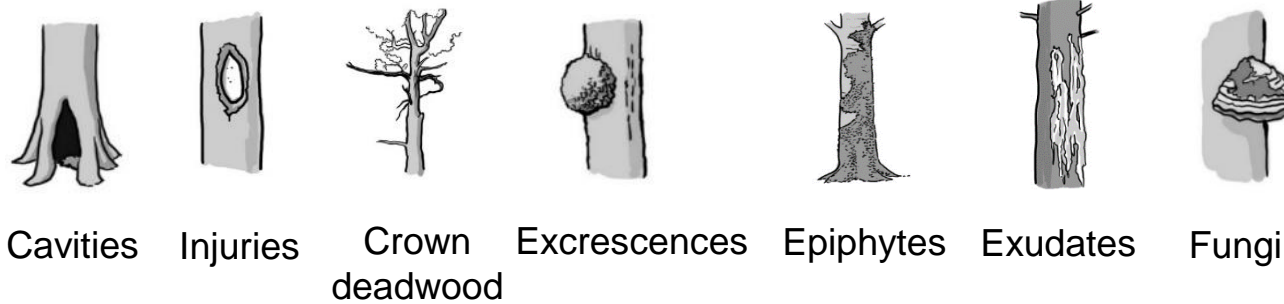
Laurent LARRIEU<sup>1,2</sup>, Alain CABANETTES<sup>1</sup>, Benoit COURBAUD<sup>3</sup>, Michel GOULARD<sup>1</sup>, Wilfried HEINTZ<sup>1</sup>, Daniel KRAUS<sup>4</sup>, Thibault LACHAT<sup>5</sup>, Sylvie LADET<sup>1</sup>, Jörg MÜLLER<sup>6,7</sup>, Yoan PAILLET<sup>3</sup>, Jonas STILLHARD<sup>8</sup>, Andreas SCHUCK<sup>9</sup>, Miroslav SVOBODA<sup>10</sup>

1. DYNAFOR, Université de Toulouse, INRA, Castanet-Tolosan, France, [laurent.larrieu@inra.fr](mailto:laurent.larrieu@inra.fr)
2. CRPF Occitanie, Tarbes, France
3. University Grenoble Alpes, Irstea, LESSEM, France
4. Chair of Silviculture, Freiburg University, Germany
5. Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences HAFI, Switzerland
6. Bavarian Forest National Park, Grafenau, Germany
7. University of Würzburg, Germany
8. Swiss Federal Research Institute WSL, Birmensdorf, Switzerland
9. European Forest Institute, Bonn Office, Germany
10. Czech University of Life Sciences, Prague, Czech Republic



## Using Tree-related Microhabitats (TreMs) to conserve biodiversity in managed stands

A TreM is a distinct, well-delineated morphological singularity occurring on living or standing dead trees, that constitutes a crucial substrate or life site for species (Larrieu et al. 2018). TreMs are widely recognized as key features for biodiversity. The current TreM typology identifies 47 TreM types according to both to their morphology and associated taxa. These 47 types have been pooled into 15 groups then 7 forms, in order to provide a range of accuracy and speed of use for different typology users.

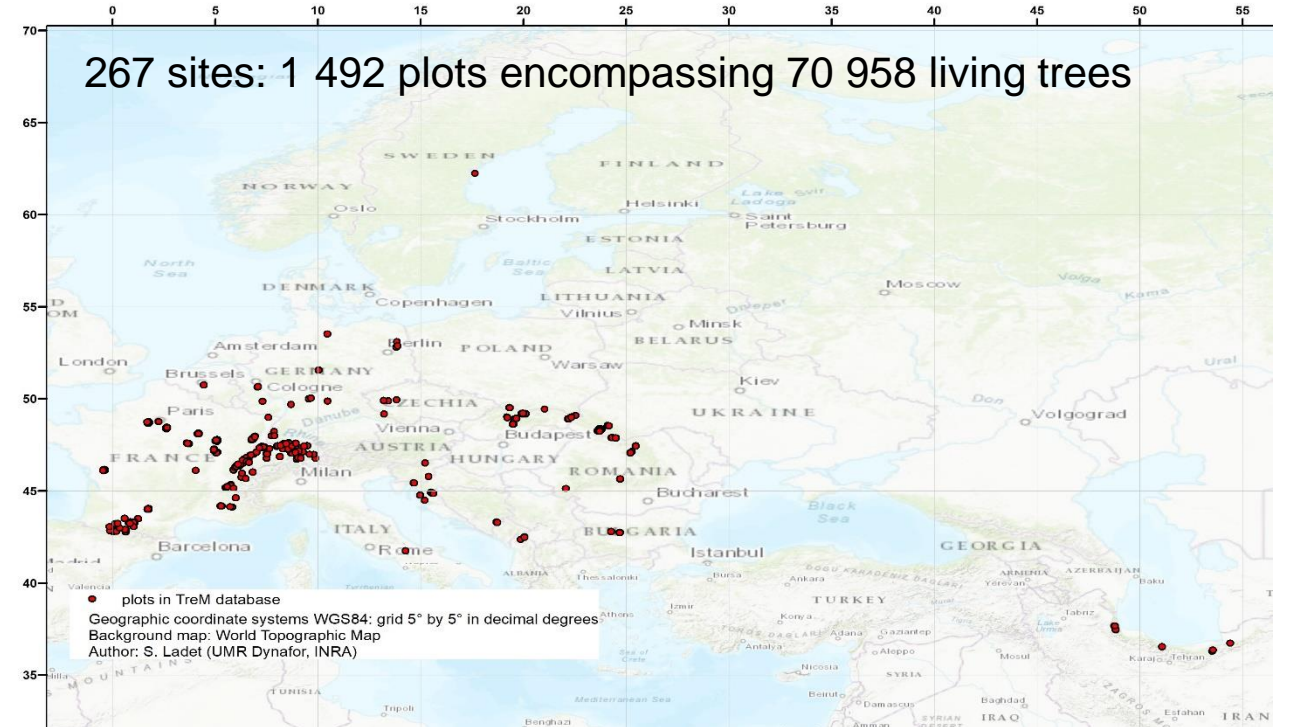


drawings by L. Apfelbacher

Thus, forest managers may identify forms during tree marking to promote a TreM diversity at the stand scale while researchers should use the type level for recording TreMs in biodiversity assessment. Another suggested approach to simplify TreM recording in day to day management may be co-occurrence patterns thus reducing the number of TreMs to be observed.

## A large international standardized TreM database

We evaluated the significance of TreM co-occurrence on living trees for 11 TreM groups.



## Broadleaves and conifers showed different co-occurrence patterns

Bark Loss (BL), Rot-Hole (RH), Crack (Cr) and Polypore (Po) showed the highest number of positive co-occurrences with the other TreMs for broadleaves (N=8) while BL (N=4) did for conifers. We found negative co-occurrences only for conifers: Exposed Heartwood (EH) with Dendrotelme (De) and Sap Run (SR).

