Saproxylic beetles and White-backed Woodpecker

Study of the vertical stratification for an efficient conservation

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Main Context

The **White-backed Woodpecker** (***Dendrocopos leucotos***) was historically present in many European countries, but has faced **dramatic declines** due to **human land-use** changes (e.g. conversion to coniferous forests, loss of old-growth forests, dead wood removal). In addition to be considered as an **umbrella species for saproxylic beetles**, it is a top-predator of these organisms, and therefore highly dependent on sufficient insect biomass supply.

Several studies have shown that the White-backed Woodpecker is **foraging** on a **diversity of dead wood structures** but its relationship with saproxylic beetles at the European scale remains unclear.

To fill this knowledge gap, we plan to study the **woodpecker - prey beetle relationship** in several **European countries** by implementing a standardized method. We aim to collaborate with local enthusiasts to implement a **vertically stratified sampling method** (**forest floor, understory, canopy**).

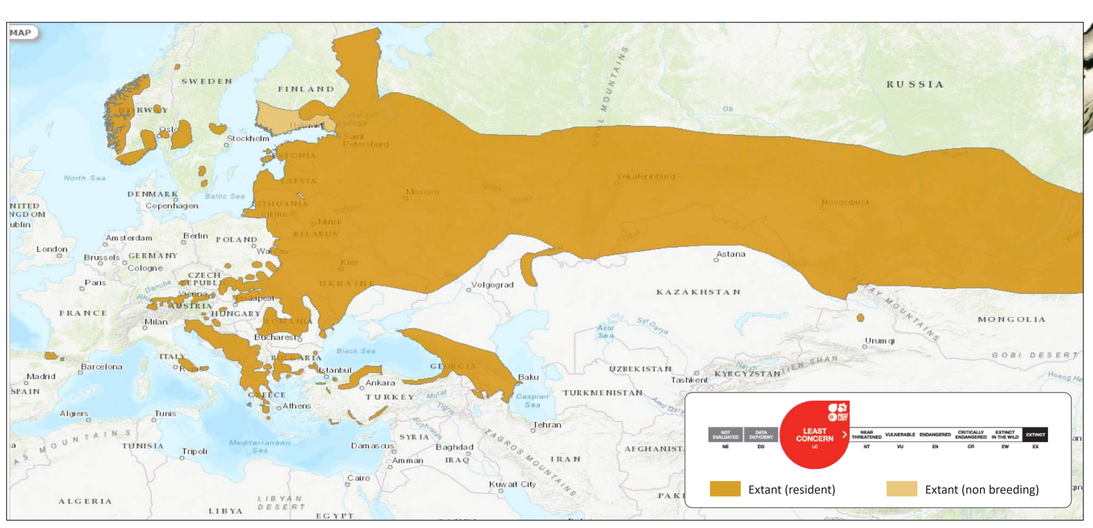
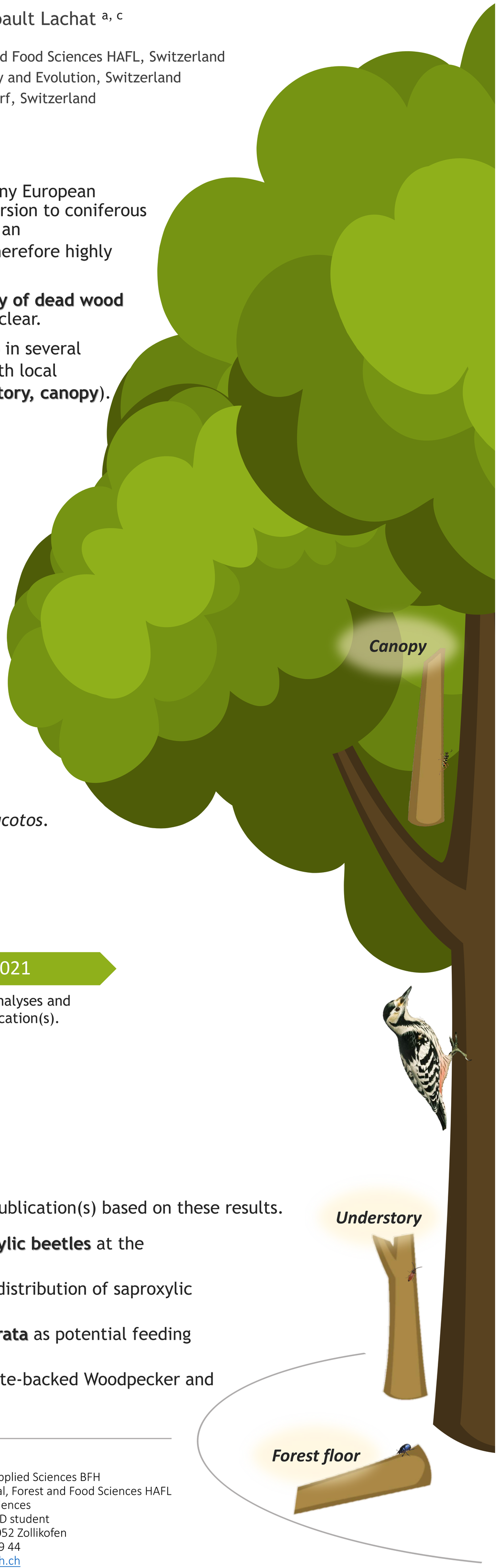


Figure 1. Overview of the geographic distribution of the White-backed Woodpecker. *Source : BirdLife International and Handbook of the Birds of the World (2016). The IUCN Red List of Threatened Species. Version 2017-3 ; www.iucnredlist.org.*



Planning, Material and Method

We are looking for **collaborators living** within the European **distribution range** of *D. leucotos*.
Participants will be **responsible** for the **field installation** and the **insects' rearing**.
Expected field time around **½ day to install** one site, plus **½ day to retrieve samples**.
We will provide the required field material.

Sequence of events…

2018	2019	2020	2021
Autumn/Winter 2018 : Installation of freshly cut pieces of wood (dominant deciduous tree, diameter : 10-15 cm, length: 2 m) within woodpecker home range.	After 12 month, collect half of the experimental dead wood, to be placed in ex-situ rearing traps.	After 24 month, collect remaining experimental dead wood. Preliminary analysis.	Data analyses and publication(s).

Expected outcomes

Contributors in this project will be included **as co-authors** in the publication(s) based on these results.

- ✓ Better understanding of the **interaction woodpecker/saproxylic beetles** at the continental scale.
- ✓ Enlightenment of potential **biogeographical patterns** for the distribution of saproxylic beetles.
- ✓ Establish the **importance** of dead wood at **different forest strata** as potential feeding source for woodpecker.
- ✓ Deliver **baseline information for** the **conservation** of the White-backed Woodpecker and saproxylic beetles.

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