Poplar plantations: habitats of interest for entomological biodiversity?

Benoit Cailleret , Yann Dumas , Ewen Marchand , Amélie Robert , and Aurélien Sallé*[1]

[1]Laboratoire Physiologie, Écologie et Environnement – Université d'Orléans : EA1207, INRAE – France

Résumé

Plantation forests are often perceived as environments with low biodiversity. The intensive management of monoclonal stands of exotic species or hybrids is indeed generally unfavourable to hosting diverse communities. However, some forestry practices could promote resources or habitat conditions absent in unmanaged environments, thus complementing subnatural forest stands at the landscape scale. The openness of poplar plantations, favoured by sparse plantations and regular undergrowth clearing, can promote the colonization of stands by fauna from neighbouring habitats. Specifically, this can promote the diversification of the herbaceous layer and associated floral resources, and contribute to the diversification of insect communities. In 2022 and 2023, we inventoried the insect communities inhabiting the canopies of 15 poplar plantations of different age classes. The objectives of the study were (i) to characterize the diversity of the insect fauna associated with the canopy of plantation poplars, a compartment hitherto little explored, (ii) to study the evolution of this fauna during the temporal evolution of the stands, and (iii) to evaluate the relative contributions of planted species, the herbaceous layer, and fauna from neighbouring stands to the observed biodiversity in poplar plantations. The data being processed have so far allowed the identification of more than 600 insect taxa. Some stands exhibited relatively high levels of diversity, including heritage taxa, generally originating from neighbouring stands. Canopy biodiversity decreases with age, as the canopy becomes increasingly distinct from the herbaceous layer. Although distinct, a significant portion of canopy biodiversity originates from the herbaceous layer or neighbouring stands. These preliminary results underline the importance of maintaining stand mosaics at the landscape scale and suggest that maintaining open stands could contribute to providing resources of interest for species from neighbouring stands.

Mots-Clés: insect, canopy, open habitat, management

*Intervenant