PhD proposal in forest entomology

How do forest diebacks drive tree-associated insect communities?

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Abstract. The scenarios of climate change raise fears that forest dieback may increase in temperate forests in terms of frequency, magnitude and extent over the next decades. Ecological effects of forest diebacks remain poorly known. There are currently relatively few studies about the role of cambiophagous beetles in worsening dieback, and no study on the effects of both dieback and forestry dedicated to declining areas on forest insect biodiversity.

Forest dieback results in widespread weakening of trees and a gradual and profound transformation of the forest ecosystem at multiple nested spatial scales, from the tree canopy to the regional landscape. Forest dieback is thus likely to modify the habitat conditions of forest insect communities, particularly saproxylic communities.

The PhD project will address (i) the effects of dieback intensity on stand structure and saproxylic beetle communities, (ii) the modulation of these ecological effects by salvage logging in the declining plots and (iii) the relationships between cambiophagous beetles (potential aggravating factors) and dieback intensity.

The PhD work will be based on several case studies included in ongoing projects lead by the Biodiv team. In several forest contexts (silver fir in the Pyrenees, pedunculate oak in the Center Val-de-Loire), these projects deal with the effects of the dieback intensity measured at different spatial scales (tree, stand, landscape) on the local response of wood-associated insect communities.

The PhD student will be strongly involved in the processing of recently collected data (Climtree and Buche projects) and will be responsible for the design, implementation and analysis of insect sampling over a gradient of declining oak forests (Canopy project), while participating in add-on components (genetic structure of of buprestid oak borer populations in declining forests, experimental analysis of bird insectivory, saproxylic beetle communities in dieback-associated microhabitats…).

Application. We invite applications from highly motivated candidates who have a background in forest and community ecology. Successful applicants will: (i) hold a M.Sc. degree (or equivalent) in ecology, (ii) have experience with methods in forest entomology and community ecology, (iii) have very good statistical and analytical skills, (iv) be fluent in spoken and written English.

Application deadline: Friday, 17 May 2019 at 11:59am

No email submissions will be accepted, you need to complete the online application form: https://pasi.irstea.fr/en/campagne/2/sujet/4157/candidature/new

Should you have additional questions, do not hesitate to contact: christophe.bouget@irstea.fr, +33.2.38.95.05.42

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