

LIFE ELIA-RTE project

Creating green corridors under overheads lines



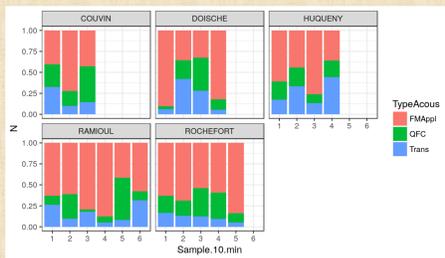
<http://www.life-elia.eu/en/>

Measuring bat activity in forest power lines right-of-ways

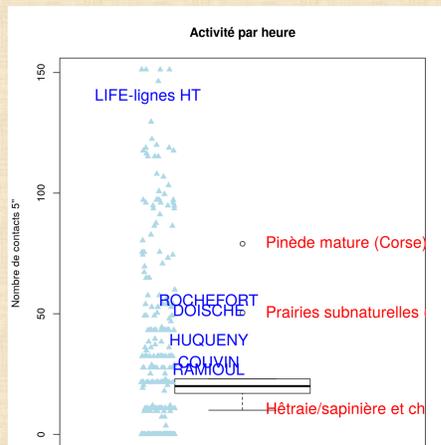
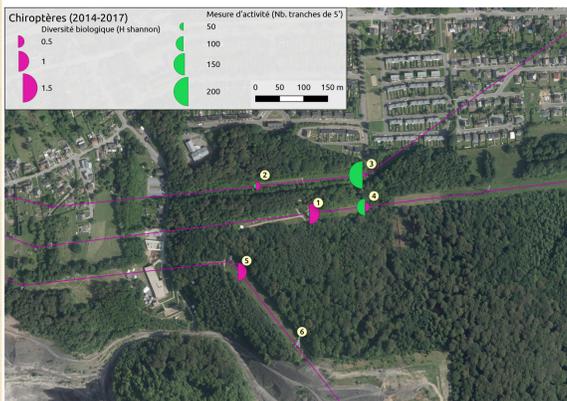


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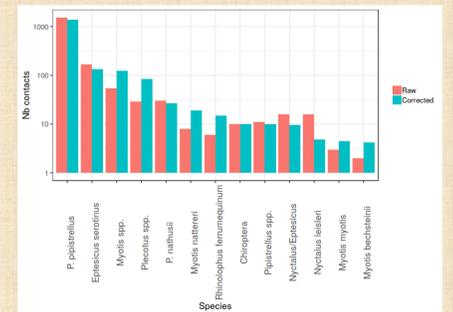
We used a standardized process that **evaluated the type of individual activity** (hunting, moving, social interaction) in addition to **species identification**, which allows us to compare results with published data. We detected at least **9 bat species, including 3 species belonging the Natura 2000 directive** of patrimonial value in the European Community. We stress the importance of right-of-way for **feeding and traveling** for most of the bat species. The **level of activity** we found is comparable to the activity measured in high-value grasslands published by Barataud (2013).



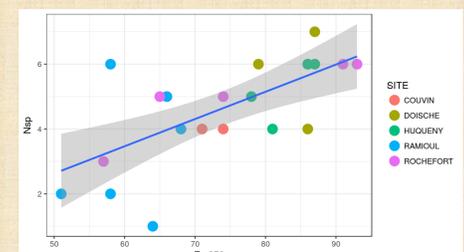
The type of signals of the common pipistrelle indicated idiosyncrasic nuances between sampling sites:
 - QFC signals are used when a bat is traveling
 - FMAppI signals are used when hunting
 - trans = transition between the two previous types of signal
 The map below illustrates the site 'Ramioul'



The mean level of activity per unit of time was comparable to those measured with the same method in grasslands and different type of forests.



The number of 5-sec contacts per 5 minutes of recording was corrected for detectability to allow comparisons between species/taxa.

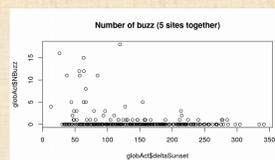
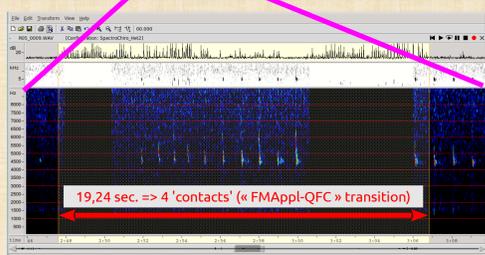
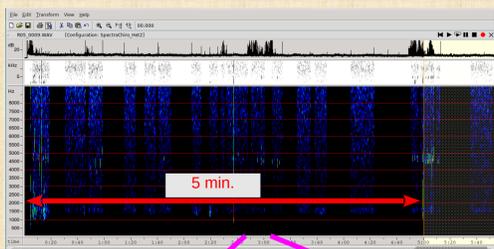


Multiple R-squared: 0.44, Adjusted R-squared: 0.41
 F-statistic: 15.78 on 1 and 20 DF, p-value: 0.00075
 The highest number of species were found at sampling sites located deeper inside of forest ('For250' = % of forest in a 250 m buffer around study site)

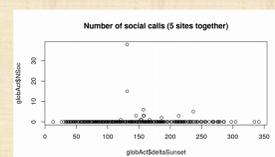
Method

We recorded ultra-sounds of bats with a **Pettersson d240x** detector coupled to a Roland recorder during 4 years on 5 sites (44 sampling points) with a standardized method to **measure bat activity**.

Analyses performed using Wavesurfer (open-source freeware), allowing a personalized screen configuration and convenient scrolling through the 5 min file. Results were analyzed with R.



Hunting activity was mainly occurring during 2 first hours after sunset



Social calls activity started mainly 2 hours after sunset (2nd part of the night)

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