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ANNEX TO THE ARTICLE:

Crețu, G., M. Barataud, T. Keßels, T. Metz & R. Gütz. 2022. The bat fauna of the Erlenbusch (Frechen, North Rhine-Westphalia, Germany); preliminary results. Plume de Naturalistes 6 : xx-xx.

Bat species contacted at Erlenbusch forest

COMMENTS on SOUND FILES

(criteria used to classify and identify signals at species level)

- **E-serotinus-prob_Erlenbusch(D)_BL11230127_2017-07-10_22-10-26:** FM signals of 2 individuals flying together in the undergroth; sonar signals cannot be distinguished from other *Eptesicus-Vespertilio-Nyctalus* species, but the type of social call emitted by one of the individuals is only known from *E. serotinus*; probable.
- **E-serotinus-prob_Erlenbusch(D)_BL11230342_2017-07-11_22-44-12:** flat-ended FM signals with slow rhythm in a clearing. High probability that another species than *E. serotinus* would use QCF signals; probable.
- **M-alcathoe_Erlenbusch(D)_BL11210227_2020-10-01_22-02-08:** FM signals belonging to the acoustic type “explosive start on high frequencies”, with medium-fast rhythm, end frequency (EF) remaining about 40 kHz; certain.
- **M-alcathoe_Erlenbusch(D)_BL11210529_2020-10-04_21-08-06:** FM signals belonging to the acoustic type “explosive start on high frequencies”, with medium rhythm, EF remaining about 40 kHz or above; certain.
- **M-bechsteinii_Erlenbusch(B)_BL11190019_2020-10-08_18-34-44:** FM signals belonging to the acoustic type “absence of peak on medium frequencies”, with medium-slow rhythm and a slight acceleration, frequency of maximum energy (FME) about 40 kHz; certain.
- **M-bechsteinii_Erlenbusch(D)_BL17130083_2015-07-18_22-25-38:** FM signals belonging to the acoustic type “absence of peak on medium frequencies”, with active searching rhythm and an approach then capture phases, medium-long duration (7ms) on cruising phase, FME is about 40 kHz (to be measured on non-overloaded signals); certain.
- **M-blythii_Erlenbusch(D)_BL11190078_2020-10-23_03-26-12:** FM signals belonging to the acoustic type “absence of peak on medium frequencies”, with passive searching rhythm and an approach phase, long duration (8-9ms), undulating sigmoid curve, narrow bandwidth (BW) about 40 kHz, FME 35-38 kHz; certain.
- **M-blythii_Erlenbusch(D)_BL17130192_2015-08-29_22-12-10:** FM signals belonging to the acoustic type “absence of peak on medium frequencies”, with transit rhythm in open habitat, very long duration (11-12ms), undulating sigmoid curve, BW about 24 kHz, FME 33-35 kHz; certain.
- **M-brandtii_Erlenbusch(B)_BL25100155_2017-07-16_00-59-42:** FM signals (acoustic type probably “explosive start and final whack”, but sequence is too faint to be sure) with social calls very similar to reference records of *M. brandtii*; probable.
- **M-daubentonii_Erlenbusch(D)_BL11230036_2017-07-10_22-12-30:** FM signals belonging to the acoustic type “absence of peak on high frequencies”, with active searching rhythm and capture phase, EF 30 kHz, FME 40-45 kHz; certain.

- **M-daubentonii_Erlenbusch(D)_BL11251332_2017-07-20_04-12-02:** FM signals belonging to the acoustic type “absence of peak on high frequencies”, with transit rhythm, duration > 8ms, EF around 40 kHz, FME 40-45 kHz; certain.
- **M-emarginatus_Erlenbusch(D)_BL11210262_2020-10-01_23-21-56:** FM signals belonging to the acoustic types “explosive start on high frequencies” (all signals except approach phase) and “final whack on high frequencies” (approach phase), BW > 90 kHz, FME around 70 kHz; certain.
- **M-emarginatus_Erlenbusch(D)_BL11210324-325_2020-10-01_23-10-28:** FM signals belonging to the acoustic types “explosive start on high frequencies” and “final whack on high frequencies” mixed in a cruising phase of active searching, BW > 90 kHz, FME around 70 kHz; certain.
- **M-emarginatus_Erlenbusch(D)_BL11210408-409_2020-10-02_00-27-02:** FM signals belonging to the acoustic types “explosive start on high frequencies” and “final whack on high frequencies” mixed in a cruising phase of active searching (beginning of the sequence, then only ES), BW > 90 kHz, FME around 70 kHz; certain.
- **M-emarginatus_Erlenbusch(D)_BL11210495_2020-10-02_04-08-52:** FM signals belonging to the acoustic type “explosive start on high frequencies” in a cruising phase of passive searching, BW > 90 kHz, FME close to 100 kHz; certain.
- **M-myotis_Erlenbusch(D)_BL11182793_2020-10-03_04-04-50:** FM signals belonging to the acoustic type “absence of peak on low frequencies”, with passive searching rhythm, undulating sigmoid curve, very long duration (11ms), BW about 40 kHz, FME 27-40 kHz; certain.
- **M-mystacinus_Erlenbusch(D)_BL11211513-4_2020-10-04_01-20-34:** FM signals belonging to the acoustic type “explosive start on high frequencies”, active searching with varying rhythm and capture phase, EF mainly 30-35 kHz on cruising phase; certain.
- **M-nattereri_Erlenbusch(D)_BL11210698_2020-09-26_00-34-16:** FM signals belonging to the acoustic type “explosive start on low frequencies”, active searching with varying rhythm, BW at least 100 kHz, FME around 50 kHz; certain.
- **N-lasipterus_Erlenbusch(D)_BL11210101_2020-09-27_19-06-56:** QCF signals, long duration, FME between 14,8 and 17,6 kHz according to signal (variation of FME typical for sonar signals, what excludes social calls of *N. leisleri*); certain.
- **N-leisleri_Erlenbusch(D)_BL11210492_2020-10-07_21-50-08:** social call (mating song of a male); certain.
- **N-leisleri_Erlenbusch(D)_BL11221745_2017-07-16_02-48-22:** alternation between short QCF signals and flat-ended FM signals, FME 23,5 to 25,5 kHz; certain.
- **N-noctula_Erlenbusch(D)_BL11220104_2017-07-09_22-11-18:** alternation between short QCF signals and flat-ended FM signals, FME of lowest QCF 20 kHz; certain.
- **P-auritus&Ppip_Erlenbusch(D)_BL11251700_2017-07-21_04-27-20:** FM signals with narrow BW and nasal timbre, explosive start; measurements of start frequency x end frequency belong to exclusive distribution of *P. auritus*; certain.
- **P-austriacus_Erlenbusch(D)_BL11230075_2017-07-10_22-26-30:** FM signals with narrow BW and nasal timbre, explosive start; measurements of start frequency x end frequency belong to exclusive distribution of *P. austriacus*; certain.
- **P-austriacus_Erlenbusch(D)_BL11230359_2017-07-11_01-44-30:** FM signals with narrow BW and nasal timbre, explosive start (two social calls at the end of sequence); measurements of start frequency x end frequency belong to exclusive distribution of *P. austriacus*; certain.
- **P-nathusii_Erlenbusch(D)_BL11210338_2020-10-01_23-17-12:** QCF signals, FME 40 kHz; certain
- **P-pipistrellus_Erlenbusch(D)_BL11210111_2020-10-01_19-37-46:** flat-ended FM signals, FME about 48 kHz, social trills; certain
- **P-pygmaeus_Erlenbusch(D)_BL11210511_2020-10-02_05-17-10:** flat-ended FM signals, FME about 57 kHz, social trills; certain

Reference:

Barataud, M. 2015. Acoustic ecology of European bats. Species identification, Study of their habitats and foraging behaviour. Biotope, Mèze ; Muséum national d’histoire naturelle, Paris (collection Inventaires et biodiversité), 340 p.