

**Table S1.** Monthly participation from September 2018 (month M9) to August 2019 (month M8) of core and satellite species at Fez-Sais site. For each month, the left-hand column corresponds to the cumulative numbers (in %) of individuals, and the right-hand column corresponds to their biomass (%).

Fez-Sais	M9	M9	M10	M10	M11	M11	M12	M12	M1	M1	M2	M2	M3	M3	M4	M4	M5	M5	M6	M6	M7	M7	M8	M8
<i>S. sacer</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>S. laticollis</i>	0	0	0	15.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>G. flagellatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	41.1	53.3	13.8	27.3	0	0	0	0
<i>G. sturmi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.9	40	24.1	41	75.8	85.5	50	58.2
<i>S. schaefferi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. hispanus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17.3	0	0	0	0	0	0	0	0
<i>C. irroratus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16.7	21.4
<i>C. ungaricus</i>	0	25.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>B. bison</i>	0	0	0	0	0	45.5	0	51.7	0	21.2	0	11.4	0	0	0	0	0	0	0	0	0	0	0	0
<i>Onitis alexis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. numida</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	21.7	0	0	0	0	0	0	0	0	25	17.6
<i>O. ion</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	14.2	0	0	0	0	0	0	0	0	0	0
<i>E. fulvus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>E. pallens</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. schreberi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. taurus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. nigellus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13.8	0	0	0	0	0
<i>O. hirtus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. maki</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. vacca</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10.3	0	0	0	0	0
<i>O. opacicollis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. andalusicus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24.14	15.3	0	0	0	0
<i>O. melitaeus</i>	0	0	0	0	36.3	0	19.5	11.6	0	0	14.8	18.3	26.1	0	39.3	0	0	0	0	0	0	0	0	0
<i>E. crocatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	38.8	38.9	26.4	19.3	19.4	0	10.3	0	0	0	0	0
<i>A. hydrochaeris</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>M. sitiphoides</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>P. esymoides</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>N. affinis ssp.</i>	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. lineolatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>M. villarreali</i>	0	0	0	0	0	0	18.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>M. consputus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>A. cribricollis</i>	0	0	0	0	32.7	0	53.5	17.3	83.5	65.1	68.1	45.4	0	0	0	0	0	0	0	0	0	0	0	0
<i>A. castaneus</i>	97.9	61.1	81.8	29.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>A. fimetarius</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>A. foetidus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>B. ghardimaouensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. mayeri</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. granarius</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>T. trituberculatus</i>	0	0	0	19.6	0	38.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative percentages of core and satellite species (%)	97.9	86.9	91.7	64.8	69.1	84.1	91.8	80.5	83.4	86.2	82.9	75.1	64.8	74.8	65.6	56.6	96.4	93.3	96.5	83.6	75.7	85.5	91.6	97.1

**Table S2.** Monthly participation from September 2018 (month M9) to August 2019 (month M8) of core and satellite species at Immouzzet. For each month, the left-hand column corresponds to the cumulative numbers (in %) of individuals, and the right-hand column corresponds to their biomass (%).

Immouzzet	M9	M9	M10	M10	M11	M11	M12	M12	M1	M1	M2	M2	M3	M3	M4	M4	M5	M5	M6	M6	M7	M7	M8	M8
<i>S. laticollis</i>	0	18.5	0	22.9	0	0	0	0	0	0	0	19.8	0	0	0	13.6	0	0	0	0	0	0	0	0
<i>G. flagellatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21.1	0	0	0	0
<i>G. sturmi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10.7	0	0
<i>S. schaefferi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. hispanus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13.1	0	0	0	0	0	0
<i>C. furcifer</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10.9	11.1	25.9	0	0
<i>C. irroratus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23.6	25	56.7
<i>C. ungaricus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>B. bison</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. ion</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>E. fulvus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	30.2
<i>C. schreberi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. taurus</i>	0	0	0	0	0	0	0	0	0	0	0	0	14.9	13.2	0	0	0	0	0	0	0	0	25	13.1
<i>O. hirtus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. maki</i>	0	0	0	0	0	0	0	0	0	0	0	0	13.9	0	13.9	0	21.4	0	56.3	21.3	53.7	18.2	0	0
<i>O. vacca</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14.5	0	0	0	0	0	0
<i>O. similis</i>	0	0	0	0	0	0	0	0	0	0	11.5	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. opacicollis</i>	0	0	0	0	0	0	32.1	47.1	0	0	24.4	15.9	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. andalusicus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. melitaeus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>E. crocatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	57.3	51.6	67.7	61.8	59.1	51.3	18.3	15.3	0	0	0	0
<i>C. erraticus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>M. sitiphoides</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>N. affinis ssp.</i>	0	0	0	0	14.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. lineolatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>M. villarreali</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>A. cribricollis</i>	0	0	0	0	0	0	42.9	11.7	60	54.9	24.4	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>A. castaneus</i>	98.8	70.3	39.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>M. striatulus</i>	0	0	30	0	0	0	0	0	20	13.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>A. fimetarius</i>	0	0	21.1	23.8	38.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>A. foetidus</i>	0	0	0	11.7	0	0	0	0	20	31.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>B. ghardimaouensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. mayeri</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. granarius</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>T. trituberculatus</i>	0	0	0	22.8	29.8	80.1	0	30.7	0	0	10.3	39.3	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative percentages of core and satellite species (%)	98.7	88.8	90.5	81.2	82.9	80.1	75	89.5	100	100	70.5	75.1	86.1	77.6	81.6	75.4	80.5	78.9	74.6	68.6	64.8	78.3	100	100

**Table S3.** Monthly participation from September 2018 (month M9) to August 2019 (month M8) of core and satellite species at Ifrane I site. For each month, the left-hand column corresponds to the cumulative numbers (in %) of individuals, and the right-hand column corresponds to their biomass (%).

Ifrane I	M9	M9	M10	M10	M11	M11	M12	M12	M1	M1	M2	M2	M3	M3	M4	M4	M5	M5	M6	M6	M7	M7	M8	M8
<i>S. sacer</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42.3	0	0	
<i>S. laticollis</i>	20.8	59.5	12.1	43.9	0	0	0	0	0	0	0	0	0	29.9	0	0	0	0	0	0	11.6	0	0	
<i>G. flagellatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12.4	0	0	10.8	0	0	
<i>G. sturmi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22.2	27.4	
<i>S. schaefferi</i>	49.5	23.7	28.5	17.4	0	0	0	0	0	0	0	0	0	0	0	0	40.6	32	37.3	26.2	29.2	11.6	44.4	18.7
<i>C. hispanus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. furcifer</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. irroratus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. ungaricus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>B. bison</i>	0	0	0	0	0	0	0	0	0	0	0	22.2	0	0	0	0	0	0	0	0	0	0	22.2	52.2
<i>Onitis numida</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. ion</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. belial</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21.8	0	0	0	0	0
<i>E. fulvus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. schreberi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. taurus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. maki</i>	0	0	0	0	0	0	0	0	0	0	0	0	22.4	0	0	0	0	0	13.7	0	26.1	0	11.1	0
<i>O. vacca</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.7	46.9	0	11.2	0	0	0	0	0	0
<i>O. similis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. opacicollis</i>	0	0	15.4	0	0	0	0	0	0	0	20	36.2	12.6	0	0	0	0	0	0	0	0	0	0	0
<i>O. andalusicus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	16.6	0	0	0	0	0	0	0	0
<i>E. crocatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.8	25.8	22.3	13.4	0	0	0	0	0	0
<i>C. erraticus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>M. sitiphoides</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>B. satellitius</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>N. affinis ssp.</i>	0	0	13.4	0	83.8	51.8	86.4	65.5	100	100	15	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. lineolatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. melanostictus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>M. villarreali</i>	0	0	0	0	0	0	0	0	0	0	18.3	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>M. consputus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>A. cribricollis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>A. castaneus</i>	14.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>A. fimetarius</i>	0	0	0	0	10.1	10.7	0	0	0	0	25	20.6	18.2	0	0	0	0	0	0	0	0	0	0	0
<i>A. foetidus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>B. ghardimaouensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>B. lugens</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. mayeri</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. granarius</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>S. niger</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>G. douei</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>T. trituberculatus</i>	0	0	0	20	0	24.7	0	17.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative percentages of core and satellite species (%)	85	83.3	69.5	81.4	93.8	87.3	86.4	83.4	100	100	78.3	79	53.1	29.9	91.5	89.3	62.8	69	51.1	48	55.1	76.3	100	98.4

**Table S4.** Monthly participation from September 2018 (month M9) to August 2019 (month M8) of core and satellite species at Ifrane II site. For each month, the left-hand column corresponds to the cumulative numbers (in %) of individuals, and the right-hand column corresponds to their biomass (%).

Ifrane II	M9	M9	M10	M10	M11	M11	M12	M12	M1	M1	M2	M2	M3	M3	M4	M4	M5	M5	M6	M6	M7	M7	M8	M8
<i>S. sacer</i>	0	15.8	0	0	0	0	0	11.9	0	0	0	17.1	0	0	0	11	0	32.8	0	32.8	0	51.8	27.3	77.4
<i>S. laticollis</i>	18.1	67.8	30.2	63.4	0	13.3	0	0	0	0	0	0	16.1	55.2	0	19.5	0	10.1	0	12.3	0	0	0	0
<i>G. flagellatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11.3	0	11.7	0	0	0	0
<i>G. sturmi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.4	13.5
<i>S. schaefferi</i>	11.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28.8	15.6	30.9	17.1	0	0	0	0
<i>C. hispanus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. furcifer</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. irroratus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. ungaricus</i>	0	0	0	0	0	0	0	0	0	0	0	12.7	0	0	0	0	0	0	0	0	0	0	0	0
<i>B. bison</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15.3	16.2	0	0	0	0	0	0	18.2	
<i>Onitis numida</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. ion</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. belial</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>E. fulvus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. schreberi</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. taurus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. maki</i>	0	0	0	0	0	0	0	0	0	0	0	0	33.6	0	0	0	12.5	0	34.8	0	47.3	10.5	0	0
<i>O. vacca</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24.6	21	0	0	0	0	10.6	0	0	0
<i>O. similis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. opacicollis</i>	0	0	11.5	0	0	0	0	0	0	16	40	51.9	0	0	0	0	0	0	0	0	0	0	0	0
<i>O. andalusicus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	13.1	15.1	0	0	0	28.2	19.8	0	0
<i>E. crocatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19.1		15.1	0	0	0	0	0	0	0
<i>C. erraticus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>M. sitiphoides</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>N. affinis ssp.</i>	0	0	0	0	78.9	50.8	92.7	68.5	77.3	71.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. lineolatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. melanostictus</i>	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>M. sphacelatus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>M. villarreali</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>M. consputus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>A. cribricollis</i>	0	0	0	0	0	0	0	0	13.6	0	12.4	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>A. castaneus</i>	63.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>A. fimetarius</i>	0	0	0	0	10.7	11.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>A. foetidus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>B. ghardimaouensis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>B. lugens</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>L. lividus</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. mayeri</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>C. granarius</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>S. niger</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>G. douei</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>T. trituberculatus</i>	0	0	11.1	17.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative percentages of core and satellite species (%)	93.1	83.5	52.9	80.9	89.6	76.1	92.7	80.3	90.9	87.6	64.4	81.7	49.6	55.1	79	80.7	71.5	69.9	65.7	74	86.2	82	81.8	91

**Table S5 : Monthly Headcount of Core and Satellite Species Recorded from September 2018 to August 2019.**

	September				October				November				December				January				February				March				April				May				June				July				August																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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**Table S6: Data Matrix of Mesological Observations for the Period September 2018–August 2019**

**A: Fez-Saïs, B: Immouzzet, C : Ifrane I, D : Ifrane II.**

	September			October			November		
	A	B	C - D	A	B	C - D	A	B	C - D
Maximum temperature ( °C )	32.89	28.61	27.74	24.47	22.24	19.56	18.51	17.16	14.28
Minimal temperature ( °C )	19.95	15.86	15.02	13.64	10.13	8.67	8.72	5.47	4.05
Average temperature ( °C )	26.42	22.24	21.38	19.05	16.19	14.12	13.61	11.32	9.16
Average precipitation (mm)	1.95	1.17	2.58	8.93	2.17	8.21	2.88	2.54	2.81
Wind velocity (m/s)	3.28	2.93	3.01	3.76	3.25	3.56	3.3	2.93	3.31
Relative humidity (%)	50.89	50.22	56.94	65.76	61.49	71.12	76.86	69.15	79.65

	December			January			February		
	A	B	C - D	A	B	C - D	A	B	C - D
Maximum temperature ( °C )	20.04	19.01	16.63	15.68	14.74	11.61	20.02	17.98	15.49
Minimal temperature ( °C )	8.42	4.98	3.89	5.24	1.55	0.7	6.39	3.39	2.07
Average temperature ( °C )	14.23	12	10.26	10.46	8.15	6.15	13.21	10.68	8.78
Average precipitation (mm)	0.54	0.09	0.52	2.51	0.077	2.28	1.64	0.69	1.42
Wind velocity (m/s)	2.75	2.8	2.6	3.42	2.67	3.09	3.24	3.14	3.08
Relative humidity (%)	65.05	49.67	62.83	71.69	54.22	70.14	59.48	43.92	56.99

	March			April			May		
	A	B	C - D	A	B	C - D	A	B	C - D
Maximum temperature ( °C )	22.21	20.44	17.43	22.04	20.66	17.46	30.14	29.7	25.54
Minimal temperature ( °C )	8.6	6.08	4.26	9.05	6.17	5.01	14.18	13.37	10.37
Average temperature ( °C )	15.4	13.26	10.85	15.54	13.41	11.23	22.16	21.53	17.95
Average precipitation (mm)	1.15	1.43	1.61	2.17	1.02	2.65	0.32	0.14	0.38
Wind Velocity (m/s)	3.74	3.4	3.29	3.78	3.56	3.59	3.67	3.48	3.37
Relative humidity (%)	61.99	50.11	62.28	68.13	58.48	70.57	52.11	37.65	53.65

	June			July			August		
	A	B	C - D	A	B	C - D	A	B	C - D
Maximum temperature ( °C )	32.36	30.58	34.38	36.08	34.43	29.8	37.88	35.62	35.18
Minimal temperature ( °C )	15.27	12.91	17.06	19.02	17.04	12.41	21.89	20.3	19.29
Average temperature ( °C )	23.82	21.74	25.72	27.55	25.73	21.1	29.89	27.96	27.23
Average precipitation (mm)	0.19	0.19	0.04	0.05	0.06	0.29	0.06	0.34	0.17
Wind Velocity (m/s)	3.69	3.82	3.6	3.84	3.55	3.34	3.59	3.11	3.44
Relative humidity (%)	48.07	40.21	39.18	44.34	32.78	48.06	34.72	29.83	32.86

	A
GPS coordinates	33°54'N – 4°59'W
Elevation (m)	609 m
Bioclimate zone	Semi-arid to temperate winter
Soil properties	Silty-clay soil

	B
GPS coordinates	33°47'N et 4°59'W
Elevation (m)	898 m
Bioclimate zone	Subhumid to cold winter
Soil properties	Terra rossa

	C
GPS coordinates	33°32'N – 5°09'W
Elevation (m)	1631 m
Bioclimate zone	Humid to cold winter
Soil properties	Silty-clay soil

	D
GPS coordinates	33°33'N – 5°10'W
Elevation (m)	1613 m
Bioclimate zone	Humid to cold winter
Soil properties	Silty-clay soil

**Table S7 : Numerical Results for Figures 8 and 10.**

Results of ANOVA / Figure 8					
	Df	Sum Sq	Mean Sq	F	value Pr(>F)
Abu	3	3280010	1093337	2.057	0.12
Residuals	44	23383764	531449		
N0	3	351.7	117.25	3.904	<b>0.0148</b>
Residuals	44	1321.5	30.03		
N1	3	37.66	12.552	1.871	0.149
Residuals	44	295.27	6.711		
N2	3	15.86	5.286	1.598	0.204
Residuals	44	145.57	3.308		
E10	3	0.097	0.03232	0.59	0.625
Residuals	44	2.409	0.05475		
E20	3	0.0897	0.02992	0.559	0.645
Residuals	44	2.3553	0.05353		

Results of the Redundancy Analysis / Figure 10				
<b>Full model of RA</b>				
Partitioning of variance:				<b>R2 adj</b>
	Inertia	Proportion		
Total	0.7605	1.0000		
Constrained	0.3168	<b>0.4105</b>		<b>0.3844</b>
Unconstrained	0.4437	0.5835		
<b>Final model of RA</b>				
Partitioning of variance:				
	Inertia	Proportion		
Total	0.7605	1.0000		
Constrained	0.2955	<b>0.3886</b>		<b>0.3517</b>
Unconstrained	0.4649	0.6114		
<b>Global significance for final model of RA / 1000 permutations</b>				
	Df	Variance	F	Pr(>F)
Final model of RA	4	0.29554	6.8331	<b>0.000999</b>
Residual	43	0.46494		
<b>Significance by variable for final model of RA / 1000 permutations</b>				
	Df	Variance	F	Pr(>F)
T	1	0.11245	10.4001	<b>0.0001</b>
A	1	0.08236	7.6171	<b>0.0001</b>
P	1	0.04628	4.2803	<b>0.0001</b>
W	1	0.05444	5.0350	<b>0.0001</b>
Residual	43	0.46494		
<b>Significance by axis for final model of RA / 1000 permutations</b>				
	Df	Variance	F	Pr(>F)
RDA1	1	0.13506	12.4911	<b>0.001</b>
RDA2	1	0.08040	7.4361	<b>0.001</b>
RDA3	1	0.06576	6.0820	<b>0.001</b>
RDA4	1	0.01431	1.3235	0.190
Residual	43	0.46494		
<b>% of variance explained by the first 2 axes</b>				
	RDA1	RDA2		
	17.76	10.57		