

Acknowledgments

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Conflicts of Interest

The authors whose names are listed immediately below certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or

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Supplementary Material

Figure legend

Figure S1 Attribution of four ecoregions in France by departments. The dotted line indicates the geographical limits of ecoregions without department administrative borders. The departments 75 (Paris), 92 (Hauts-de-Seine), 93 (Seine-Saint-Denis), and 94 (Val-de-Marne) are represented by a red star and they are assigned to the Atlantic ecoregion.

Figure S2. Taxon accumulation curve for the four clusters of records in France. The color of curves indicates the corresponding ecoregion, with brown, blue and green for montane, Atlantic and continental domains, respectively.

Figure S3. Distribution of taxa based on their occurrence in the database, ordered by observation classes using **A.** multiples of 100 records **B.** for taxa with less than 100 records (red bar in panel A), multiples of 10 records and **C.** for taxa with less than 10 records (red bar in panel B) detailed distribution per each frequency.

Figure S4. Temporal dynamics of fungal recording during the period [1800-2022] in four clusters of recording activity. The Northern cluster includes the departments of Nord, Oise, Nord-Pas-de-Calais and Seine-Maritime. The Western cluster includes the departments of Charentes, Loire-Atlantic, Mayenne, Vendée and Vienne. The Eastern cluster includes the departments of Doubs, Jura, Haute-Saône and Territoire de Belfort. The Alpine cluster includes the departments of Isère, Loire, Rhône, Savoie and Haute-Savoie.

Supplementary Tables

Table S1: Identity of the 26 contributors of FongiBase with the number of deposited fungal observations and the number of one observation taxa (singletons).

Contributor	Number of records	Percentage of records	Number of singletons	Proportion of singletons (in %)
ABMARS	7262	0.7	3	0.04
ADONIF	120394	11.9	372	0.31
AMO	47515	4.7	100	0.21
AscoFrance	2385	0.2	239	10.02
Amblard BD.	1	0.00009	0	0
CEMA	48	0.005	0	0
Lécuri C., Moreau PA.	123	0.01	1	0.81
CBNFC-ORI	177838	17.6	37	0.02
Faculté de pharmacie de Rennes	168	0.02	0	0
FMBDS	180358	17.9	624	0.35
GMN	1765	0.2	3	0.17
Le Pleurote Sinois	5967	0.6	0	0
MNHN	155758	15.4	173	0.11
ONF	314	0.03	0	0
Aleksandrowicz P., Chabrerie O., Clowez P.	1	0.00009	0	0
RNF	136257	13.5	84	0.06
SMCTO	7670	0.7	0	0
SMF	15061	1.5	178	1.18
SMNF	112917	11.2	329	0.29
SMP	16	0.002	0	0
SLNP	5570	0.6	7	0.13
SMRY	4272	0.4	97	2.27
SMM	1449	0.1	0	0
SMR	752	0.1	3	0.40
ULCO	33	0.0	2	6.06
UL	42001	4.2	97	0.23

Table S2: Detail of the number of deposited fungal records in FongiBase in relation to their natural habitat of collecting according to CORINE Biotopes catalog.

CORINE biotope code	CORINE biotope division 1	CORINE biotope division 2	Number of records	Percentage of records
2	Non-marine waters	Non-marine waters unclassified	104	0.08
3	Scrub and grasslands	Scrub and grassland unclassified	1488	1.21
4	Forests	Forests unclassified	2154	1.75
5	Bogs and marshes	Bogs and marsh unclassified	544	0.44
6	Rocky habitats	Inlands rocks, screes and sands unclassified	167	0.14
8	Agricultural land and highly artificial landscapes	Agricultural land and highly artificial landscapes unclassified	224	0.18
16	Coastal and halophilic habitats	Coastal sand-dunes and sand beaches	2474	2.01
22	Non-marine waters	Standing fresh water	139	0.11
31	Scrub and grasslands	Heath and scrub	1699	1.38
32	Scrub and grasslands	Sclerophyllous scrub	109	0.09
34	Scrub and grasslands	Dry calcareous grasslands and steppes	3687	3.00
35	Scrub and grasslands	Dry siliceous grasslands	424	0.35
36	Scrub and grasslands	Alpine and subalpine grasslands	3406	2.77
37	Scrub and grasslands	Humid grasslands and tall herb communities	860	0.70
38	Scrub and grasslands	Mesophile grassland	754	0.61
41	Forests	Broad-leaved deciduous forests	25289	20.58
42	Forests	Coniferous woodland	18008	14.66
43	Forests	Mixed woodland	44525	36.24
44	Forests	Alluvial and very wet forests and brush	3543	2.88
45	Forests	Broad-leaved evergreen woodland	179	0.15
51	Bogs and marshes	Raised bogs	335	0.27
53	Bogs and marshes	Water-fringe vegetation	125	0.10
54	Bogs and marshes	Fens, transition mires and springs	4877	3.97
62	Rocky habitats	Inland cliffs and exposed rocks	41	0.03
81	Agricultural land and highly artificial landscapes	Improved grasslands	1834	1.49
82	Agricultural land and highly artificial landscapes	Crops	144	0.12
83	Agricultural land and highly artificial landscapes	Orchards, groves and tree plantat	250	0.20
84	Agricultural land and highly artificial landscapes	Tree lines, hedges, small woods, bocage, parkland dehesa	129	0.10
85	Agricultural land and highly artificial landscapes	Urban parks and large gardens	5335	4.34

Table S3: List of French department and associated numbers of records deposited in Fongibase, area and density of observations.

INSEE number	Name of department	Number of records	Area	Record density	Percentage deviation from national observations	Percentage deviation from national density
1	Ain	13,192	5,762	2.29	23.33	23.00
2	Aisne	13,795	7,362	1.87	28.96	0.67
3	Allier	9,694	7,340	1.32	-9.38	-29.05
4	Alpes-de-Haute-Provence	1,814	6,925	0.26	-83.04	-85.93
5	Hautes-Alpes	1,444	5,549	0.26	-86.50	-86.02
6	Alpes-Maritimes	3,834	4,299	0.89	-64.16	-52.09
7	Ardèche	5,054	5,529	0.91	-52.75	-50.89
8	Ardennes	1,649	5,229	0.32	-84.58	-83.06
9	Ariège	7,074	4,890	1.45	-33.87	-22.28
10	Aube	19,336	6,004	3.22	80.76	73.02
11	Aude	1,362	6,139	0.22	-87.27	-88.08
12	Aveyron	3,217	8,735	0.37	-69.93	-80.21
13	Bouches-du-Rhône	1,196	5,088	0.24	-88.82	-87.37
14	Calvados	4,583	5,548	0.83	-57.16	-55.62
15	Cantal	8,221	5,726	1.44	-23.15	-22.87
16	Charente	35,341	5,956	5.93	230.39	218.78
17	Charente-Maritime	12,140	6,864	1.77	13.49	-4.98
18	Cher	1,864	7,235	0.26	-82.57	-86.16
19	Corrèze	768	5,857	0.13	-92.82	-92.96
21	Côte-d'Or	5,727	8,763	0.65	-46.46	-64.89
22	Côtes-d'Armor	13,690	6,878	1.99	27.98	6.93
23	Creuse	1,632	5,565	0.29	-84.74	-84.24
24	Dordogne	4,621	9,060	0.51	-56.80	-72.60
25	Doubs	75,227	5,233	14.38	603.26	672.32
26	Drôme	7,513	6,530	1.15	-29.76	-38.19
27	Eure	9,749	6,040	1.61	-8.86	-13.28
28	Eure	491	5,880	0.08	-95.41	-95.51
29	Finistère	1,580	6,733	0.23	-85.23	-87.39
2A	Corse-du-Sud	871	4,014	0.22	-91.86	-88.34
2B	Haute-Corse	1,029	4,066	0.25	-90.38	-86.40
30	Gard	2,761	5,853	0.47	-74.19	-74.66
31	Haute-Garonne	3,796	6,309	0.60	-64.51	-67.68
32	Gers	358	6,256	0.06	-96.65	-96.93
33	Gironde	1,399	9,976	0.14	-86.92	-92.47

34	Hérault	7,990	6,101	1.31	-25.31	-29.64
35	Ille-et-Vilaine	1,556	6,775	0.23	-85.45	-87.66
36	Indre	109	6,791	0.02	-98.98	-99.14
37	Indre-et-Loire	1,749	6,127	0.29	-83.65	-84.66
38	Isère	50,018	7,432	6.73	367.60	261.57
39	Jura	70,851	4,999	14.17	562.35	661.44
40	Landes	2,432	9,243	0.26	-77.26	-85.86
41	Loir-et-Cher	4,271	6,343	0.67	-60.07	-63.83
42	Loire	15,732	4,781	3.29	47.07	76.78
43	Haute-Loire	8,417	4,977	1.69	-21.31	-9.14
44	Loire-Atlantique	25,971	6,809	3.81	142.79	104.92
45	Loiret	4,977	6,775	0.73	-53.47	-60.53
46	Lot	1,252	5,217	0.24	-88.30	-87.11
47	Lot-et-Garonne	125	5,361	0.02	-98.83	-98.75
48	Lozère	853	5,167	0.17	-92.03	-91.13
49	Maine-et-Loire	8,545	7,172	1.19	-20.12	-35.99
50	Manche	952	5,938	0.16	-91.10	-91.39
51	Marne	1,604	8,169	0.20	-85.00	-89.45
52	Haute-Marne	2,162	6,211	0.35	-79.79	-81.30
53	Mayenne	22,810	5,175	4.41	113.24	136.80
54	Meurthe-et-Moselle	3,746	5,246	0.71	-64.98	-61.64
55	Meuse	2,431	6,211	0.39	-77.27	-78.97
56	Morbihan	2,254	6,823	0.33	-78.93	-82.25
57	Moselle	3,600	6,216	0.58	-66.35	-68.89
58	Nièvre	2,255	6,817	0.33	-78.92	-82.23
59	Nord	58,089	5,743	10.11	443.05	443.41
60	Oise	19,158	5,860	3.27	79.10	75.64
61	Orne	9,878	6,103	1.62	-7.66	-13.04
62	Pas-de-Calais	78,199	6,671	11.72	631.05	529.77
63	Puy-de-Dôme	10,565	7,970	1.33	-1.23	-28.78
64	Pyrénées-Atlantiques	2,575	7,645	0.34	-75.93	-81.90
65	Hautes-Pyrénées	6,846	4,464	1.53	-36.00	-17.61
66	Pyrénées-Orientales	12,698	4,116	3.09	18.71	65.74
67	Bas-Rhin	3,138	4,755	0.66	-70.66	-64.55
68	Haut-Rhin	6,153	3,525	1.75	-42.48	-6.22
69	Rhône	15,204	3,249	4.68	42.14	151.41
70	Haute-Saône	34,777	5,360	6.49	225.11	248.58
71	Saône-et-Loire	1,285	8,575	0.15	-87.99	-91.95
72	Sarthe	993	6,206	0.16	-90.72	-91.40
73	Savoie	34,986	6,028	5.80	227.07	211.81
74	Haute-Savoie	40,103	4,388	9.14	274.90	391.00
75	Paris	818	105	7.79	-92.35	318.54
76	Seine-Maritime	23,710	6,278	3.78	121.65	102.90
77	Seine-et-Marne	12,827	5,915	2.17	19.91	16.50

78	Yvelines	4,399	2,284	1.93	-58.88	3.47
79	Deux-Sèvres	7,563	5,999	1.26	-29.30	-32.27
80	Somme	10,580	6,170	1.71	-1.09	-7.88
81	Tarn	720	5,758	0.13	-93.27	-93.28
82	Tarn-et-Garonne	369	3,718	0.10	-96.55	-94.67
83	Var	2,144	5,973	0.36	-79.96	-80.72
84	Vaucluse	1,448	3,567	0.41	-86.46	-78.19
85	Vendée	26,674	6,720	3.97	149.36	113.25
86	Vienne	48,874	6,990	6.99	356.90	275.64
87	Haute-Vienne	909	5,520	0.16	-91.50	-91.15
88	Vosges	5,653	5,874	0.96	-47.15	-48.30
89	Yonne	2,693	7,427	0.36	-74.82	-80.52
90	Territoire de Belfort	11,433	609	18.77	6.88	908.59
91	Essonne	6,697	1,804	3.71	-37.39	99.44
92	Hauts-de-Seine	497	176	2.82	-95.35	51.71
93	Seine-Saint-Denis	221	236	0.94	-97.93	-49.69
94	Val-de-Marne	362	245	1.48	-96.62	-20.62
95	Val-d'Oise	976	1,246	0.78	-90.88	-57.92

Table S4: List of the 25 most recorded taxa in Fongibase, including their lineage and trophic guild of belonging, and the corresponding number of records.

Species	Phylum	Ecological guilds	Number of records
<i>Hypholoma fasciculare</i>	Basidiomycota	Plant saprotroph	7,091
<i>Amanita rubescens</i>	Basidiomycota	Mutualist	6,413
<i>Trametes versicolor</i>	Basidiomycota	Wood saprotroph	5,915
<i>Amanita citrina</i>	Basidiomycota	Mutualist	5,716
<i>Stereum hirsutum</i>	Basidiomycota	Wood saprotroph	5,495
<i>Russula cyanoxantha</i>	Basidiomycota	Mutualist	5,266
<i>Pluteus cervinus</i>	Basidiomycota	Wood saprotroph	4,583
<i>Mycena pura</i>	Basidiomycota	Plant saprotroph	4,496
<i>Laccaria amethystea</i>	Basidiomycota	Mutualist	4,500
<i>Lycoperdon perlatum</i>	Basidiomycota	Plant saprotroph	4,475
<i>Mycena galericulata</i>	Basidiomycota	Wood saprotroph	4,125
<i>Rhodocollybia butyracea</i>	Basidiomycota	Plant saprotroph	4,121
<i>Fomes fomentarius</i>	Basidiomycota	Wood saprotroph	4,031
<i>Amanita muscaria</i>	Basidiomycota	Mutualist	4,021
<i>Inocybe geophylla</i>	Basidiomycota	Mutualist	3,890
<i>Megacollybia platyphylla</i>	Basidiomycota	Plant saprotroph	3,890
<i>Paxillus involutus</i>	Basidiomycota	Mutualist	3,749
<i>Collybia dryophila</i>	Basidiomycota	Plant saprotroph	3,716
<i>Infundibulicybe gibba</i>	Basidiomycota	Plant saprotroph	3,690
<i>Armillaria mellea</i>	Basidiomycota	Plant saprotroph	3,576
<i>Hymenopellis radicata</i>	Basidiomycota	Plant saprotroph	3,501
<i>Russula ochroleuca</i>	Basidiomycota	Mutualist	3,483
<i>Xylaria hypoxylon</i>	Ascomycota	Wood saprotroph	3,461
<i>Fomitopsis betulina</i>	Basidiomycota	Wood saprotroph	3,468
<i>Clitocybe nebularis</i>	Basidiomycota	Plant saprotroph	3,437

Table S5: Detail of the number of deposited fungal records in FongiBase in relation to their belonging to ecological guilds according to FunGuild.

Ecological guilds	Number of records	Percentage of records
Animal parasite	753	0.08
Animal saprotroph	51	0.01
Bryotrophic	5642	0.61
Carbonicolous	294	0.03
Dung saprotroph	6550	0.71
Endophyte	2897	0.32
Epiphyte	53	0.01
Fungal parasite	8804	0.96
Mutualist	409643	44.64
Plant parasite	26631	2.90
Plant saprotroph	289921	31.59
Wood saprotroph	166402	18.13

Figure S1

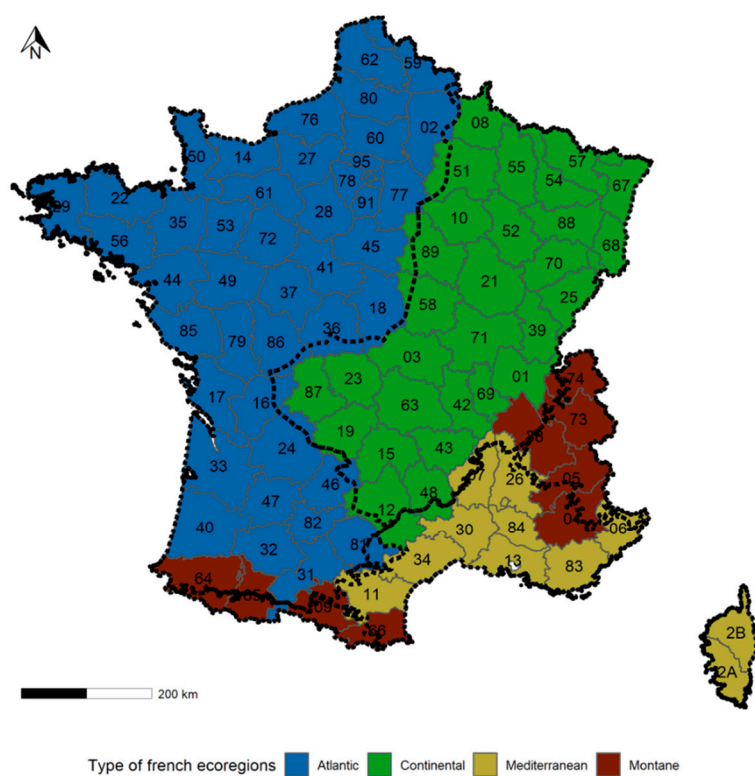


Figure S2

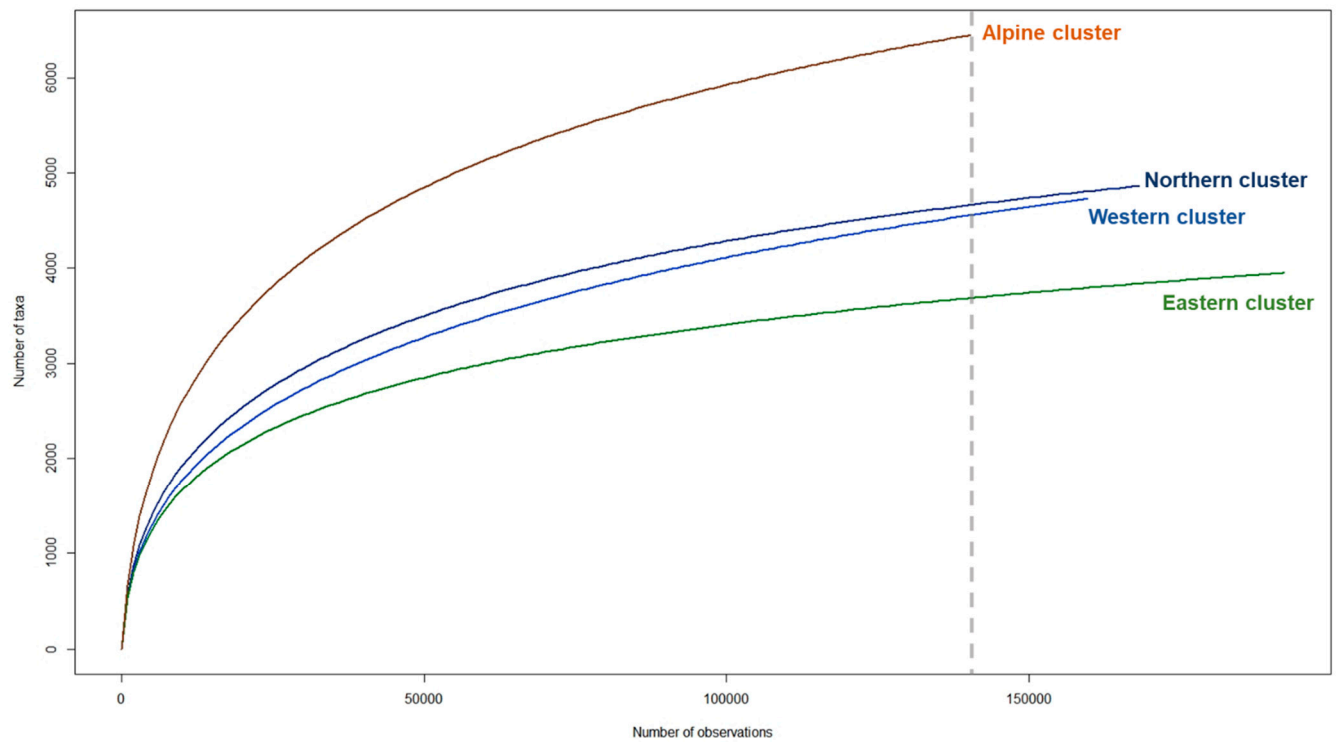


Figure S3

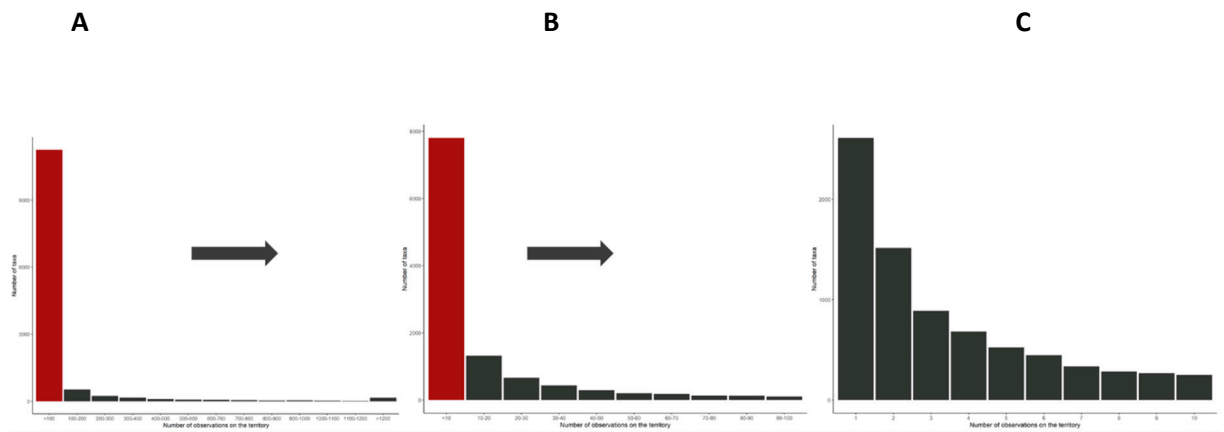


Figure S3. Distribution of taxa based on their occurrence in the database, ordered by observation classes using **A.** multiples of 100 records **B.** for taxa with less than 100 records (red bar in panel A), multiples of 10 records and **C.** for taxa with less than 10 records (red bar in panel B) detailed distribution per each frequency.

Figure S4

