

Supplementary Material

Appendix 1 - Testing the differences among protocols.

By performing an analysis on the sample coverage of each plot using the R package “iNEXT” (Hsieh et al. 2016), it is possible to have an estimate of the degree of completeness that was reached for each sampled plot (Chao et al. 2014). Therefore, by comparing the plot’s sample coverage estimates with regards to their sampling intensities and sizes, we can have an insight into the potential effect that these different protocols might have on the representativeness of the local assemblage for each plot. However, from our analysis, no clear differences in sample coverage estimates could be seen between the different sampling protocols (see boxplot in Fig. S1).

Additional references

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Appendix 2 - Main characteristics of the bird-related variables categories.

Forest specialists: bird species that do not frequently breed elsewhere other than in forest according to the FAO definition or other types of environments that fulfil the basic criteria of the FAO definition but are often included as agricultural or urban categories on common land-use map. This definition excludes species that require trees for nesting but can use single dispersed trees outside of forest habitats for that purpose (e.g. some gardens, city parks and agroforestry systems).

Forest generalists: bird species that more than incidentally breed or forage in forest according to the FAO definition or other types of environments that fulfil the basic criteria of the FAO definition of forest but are predominantly under agricultural or urban use (e.g. some gardens, city parks and agroforestry systems).

Ground-foragers: feeding on the ground

Understorey foragers: feeding in low vegetation up to 1.5 m above the ground

Canopy foragers: feeding on high bushes or in trees

Aerial foragers: fly-catching or obtaining aerial food, typically flying insects (the birds typically stay on the wing while handling and ingesting the prey).

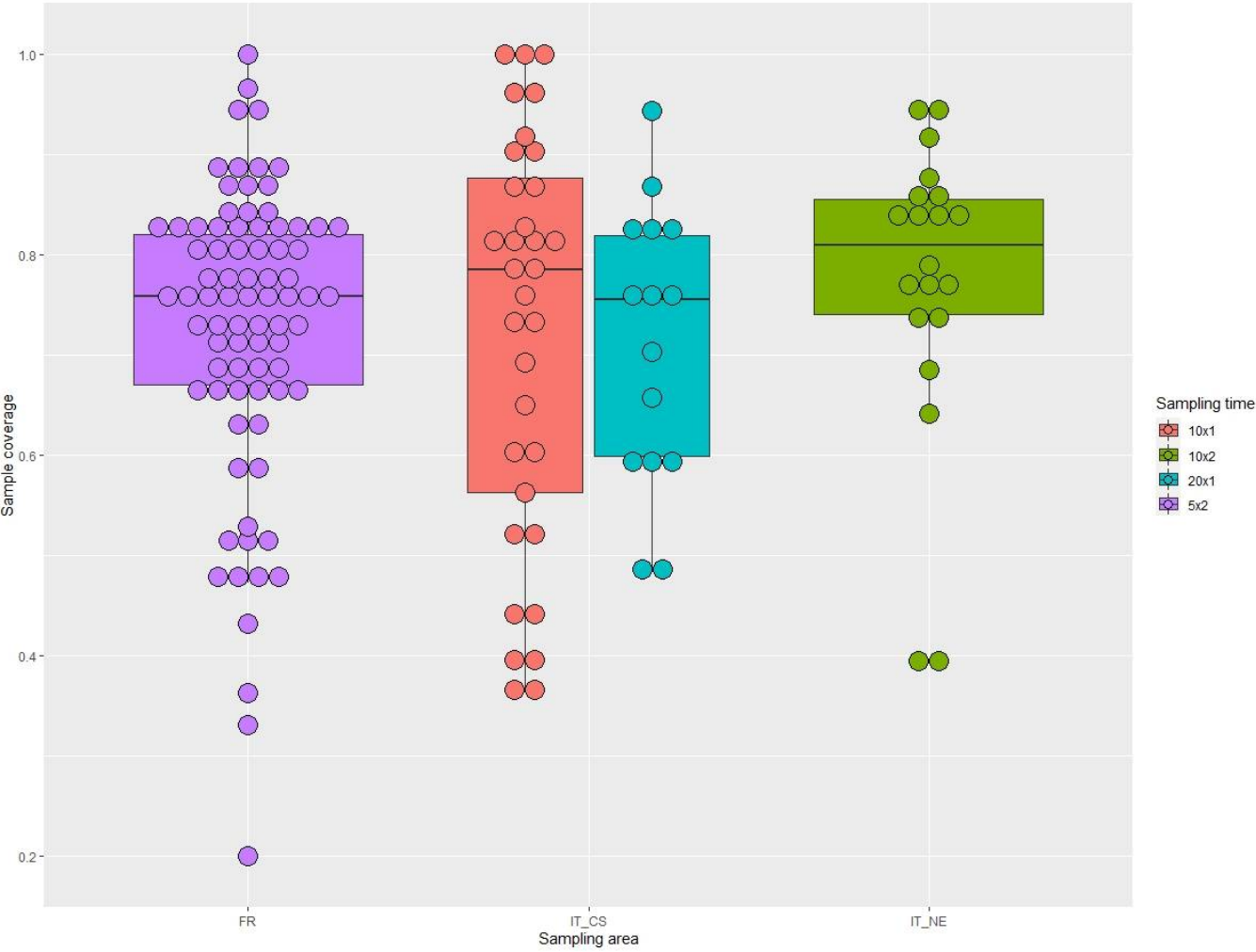
Ground-nesters: nesting on the ground

Understorey nesters: nesting in low vegetation up to 1.5 m above the ground

Canopy nesters: open or domed nests in high bushes or in trees

Cavity nesters: birds nesting in natural holes or in cavities excavated by themselves

Fig. S1 - Boxplot of the sample coverage estimates of the plots grouped by combination of sampling time (2 times 5 minutes, 1 time 10 or 20 minutes and 2 times 10 minutes) and sampling area (which differed between the 3 regions: FR, IT_CS and IT_NE).



Tab. S1 - List of the 148 plots and their main characteristics. Topographic variables, management strategy (MAN= managed through planned silvicultural practices, UNM=no), European forest category (EEA, 2006), and the Habitats Directive habitats' categories' code are reported. Site codes correspond to IT_CS = Centre-South Italy, IT_NE = North-East Italy, and FR = France.

Plot	Site	Elevation (m a.s.l.)	Slope (%)	Aspect	Management	Forest category	Habitat code
<i>ALBURNI_100</i>	IT_CS	1279	14.87855	52.43	MAN	Mountainous beech forest	9210
<i>ALBURNI_101</i>	IT_CS	1323	5.174222	206.57	MAN	Mountainous beech forest	9210
<i>ALBURNI_171</i>	IT_CS	1306	12.06974	232.7	MAN	Mountainous beech forest	9210
<i>ALBURNI_184</i>	IT_CS	1334	11.96841	46.55	MAN	Mountainous beech forest	9210
<i>ALBURNI_194</i>	IT_CS	1211	23.37021	10.26	MAN	Mountainous beech forest	9210
<i>ALBURNI_68</i>	IT_CS	1428	6.010616	202.62	MAN	Mountainous beech forest	9210
<i>ALBURNI_69</i>	IT_CS	1439	4.595769	220.91	MAN	Mountainous beech forest	9210
<i>ALBURNI_79</i>	IT_CS	1402	0.928036	0	MAN	Mountainous beech forest	9210
<i>ALBURNI_80</i>	IT_CS	1365	3.663704	55.3	MAN	Mountainous beech forest	9210
<i>ALBURNI_90</i>	IT_CS	1359	10.2654	206.57	MAN	Mountainous beech forest	9210
<i>ALBURNI_91</i>	IT_CS	1312	6.106912	150.52	MAN	Mountainous beech forest	9210
<i>ALT-17479</i>	FR	1476	7.5267	75.66	MAN	Mountainous beech forest	91P0
<i>ALT-17756</i>	FR	1416	11.10801	360	MAN	Mountainous beech forest	91P0
<i>ALT-17839</i>	FR	1444	8.57649	297.46	MAN	Mountainous beech forest	91P0
<i>ALT-19165</i>	FR	1488	23.51261	143.95	MAN	Mountainous beech forest	91P0
<i>ALT-19727</i>	FR	1446	25.24388	8.52	MAN	Mountainous beech forest	91P0
<i>ALT-19953</i>	FR	1413	25.82344	4.14	MAN	Alpine coniferous forest	9150
<i>ALT-RBI-C25</i>	FR	1462	14.80186	26.13	UNM	Mountainous beech forest	91P0
<i>ALT-RBI-C45</i>	FR	1407	23.16225	287.82	UNM	Mountainous beech forest	91P0
<i>ALT-RBI-C62</i>	FR	1339	29.69117	249.86	UNM	Mountainous beech forest	91P0
<i>ALT-RBI-P17</i>	FR	1454	23.1279	52.2	UNM	Mountainous beech forest	91P0
<i>ALT-RBI-P80</i>	FR	1408	12.09046	310.48	UNM	Alpine coniferous forest	9150
<i>ALT-RBI-P84</i>	FR	1397	14.17648	292.87	UNM	Mountainous beech forest	91P0
<i>BC1</i>	FR	1059	19.46968	169.57	MAN	Mountainous beech forest	91Q0
<i>BC1973</i>	FR	973	18.78906	15.88	MAN	Mountainous beech forest	91Q0
<i>BC377</i>	FR	1013	24.59155	124.27	MAN	Mountainous beech forest	91Q0

Plot	Site	Elevation (m a.s.l.)	Slope (%)	Aspect	Management	Forest category	Habitat code
<i>BC382</i>	FR	1067	12.78747	91.03	MAN	Mountainous beech forest	91Q0
<i>BRE-RBI-B14</i>	FR	1300	9.66468	225.85	UNM	Mountainous beech forest	91P0
<i>BRE-RBI-B79</i>	FR	1224	8.80405	249.92	UNM	Mountainous beech forest	91P0
<i>BS3504</i>	FR	1041	32.40841	98.15	UNM	Mountainous beech forest	91Q0
<i>C1</i>	IT_NE	1197	12.25	157.99	MAN	Alpine coniferous forest	9130
<i>C1085</i>	IT_NE	1232	10.73	322.03	MAN	Alpine coniferous forest	9130
<i>C1086</i>	IT_NE	1232	6.48	57.74	MAN	Alpine coniferous forest	9130
<i>C1091</i>	IT_NE	1265	8.5	95.18	MAN	Alpine coniferous forest	9130
<i>C1092</i>	IT_NE	1281	6.02	74.75	MAN	Alpine coniferous forest	9130
<i>C1095</i>	IT_NE	1311	11.54	89.95	MAN	Alpine coniferous forest	9130
<i>C1100</i>	IT_NE	1329	11.29	51.87	MAN	Alpine coniferous forest	9130
<i>C2</i>	IT_NE	1260	18.48	109.67	MAN	Alpine coniferous forest	9130
<i>C3</i>	IT_NE	1280	21.05	167.73	MAN	Alpine coniferous forest	9130
<i>C4</i>	IT_NE	1166	19.8	179.49	MAN	Alpine coniferous forest	9130
<i>CA24</i>	FR	1056	19.02154	105.84	UNM	Mountainous beech forest	91Q0
<i>CB23</i>	FR	1010	15.52768	199.58	UNM	Mountainous beech forest	91Q0
<i>CC23</i>	FR	1049	19.96013	231.72	UNM	Mountainous beech forest	91Q0
<i>CE26</i>	FR	1014	13.23073	220.05	UNM	Mountainous beech forest	91Q0
<i>CH22</i>	FR	817	26.16543	67.48	UNM	Alpine coniferous forest	9150
<i>CILENTO_106</i>	IT_CS	1121	9.880828	1.33	MAN	Mountainous beech forest	9210
<i>CILENTO_163</i>	IT_CS	1325	11.99806	239.04	MAN	Mountainous beech forest	9210
<i>CILENTO_170</i>	IT_CS	1385	7.511004	317.49	MAN	Mountainous beech forest	9210
<i>CILENTO_175</i>	IT_CS	1225	36.69777	1.25	MAN	Mountainous beech forest	9210
<i>CILENTO_187</i>	IT_CS	1555	17.93522	301.7	MAN	Mountainous beech forest	9210
<i>CILENTO_191</i>	IT_CS	1370	11.72816	249.44	MAN	Mountainous beech forest	9210
<i>CILENTO_219</i>	IT_CS	1000	26.1971	69.78	MAN	Thermophilous deciduous forest	91M0
<i>CILENTO_233</i>	IT_CS	1703	27.72994	37.49	MAN	Mountainous beech forest	9210
<i>CILENTO_317</i>	IT_CS	1137	5.966317	215.54	MAN	Thermophilous deciduous forest	91M0
<i>CILENTO_318</i>	IT_CS	1169	16.7253	217.33	MAN	Thermophilous deciduous forest	91M0
<i>CILENTO_74</i>	IT_CS	1458	34.20373	335.73	MAN	Mountainous beech forest	9210

Plot	Site	Elevation (m a.s.l.)	Slope (%)	Aspect	Management	Forest category	Habitat code
<i>CILENTO_93</i>	IT_CS	1354	27.95251	91.31	MAN	Mountainous beech forest	9210
<i>CILENTO_94</i>	IT_CS	1311	26.36233	101.31	MAN	Mountainous beech forest	9210
<i>CILENTO_96</i>	IT_CS	1405	30.27998	293.72	MAN	Mountainous beech forest	9210
<i>CILENTO_98</i>	IT_CS	1100	7.188555	354.47	MAN	Mountainous beech forest	9210
<i>CO2801</i>	FR	1018	7.41232	192.92	UNM	Alpine coniferous forest	9150
<i>CP2901</i>	FR	1008	10.27826	219.92	UNM	Mountainous beech forest	91Q0
<i>D23</i>	FR	967	13.64574	259.32	MAN	Alpine coniferous forest	9150
<i>D37</i>	FR	1027	11.83078	270	MAN	Mountainous beech forest	91Q0
<i>HCJ-RI-03</i>	FR	1125	37.7639	114.65	UNM	Mountainous beech forest	91P0
<i>HCJ-RI-04</i>	FR	872	14.3213	30.09	UNM	Alpine coniferous forest	9150
<i>HCJ-RI-08</i>	FR	805	8.37775	323.65	UNM	Alpine coniferous forest	9150
<i>HCJ-RI-106</i>	FR	1315	31.38095	197.77	UNM	Alpine coniferous forest	9150
<i>HCJ-RI-115</i>	FR	1287	8.09602	125.11	UNM	Alpine coniferous forest	9150
<i>HCJ-RI-134</i>	FR	1026	19.54521	147.26	UNM	Mountainous beech forest	91P0
<i>HCJ-RI-40</i>	FR	1223	36.69752	130.77	UNM	Mountainous beech forest	91P0
<i>HCJ-RI-80</i>	FR	1272	39.21751	93.45	UNM	Mountainous beech forest	91P0
<i>HCJ-RN-108</i>	FR	1060	28.80105	165.29	MAN	Alpine coniferous forest	9150
<i>HCJ-RN-120</i>	FR	1198	20.85081	96.78	MAN	Alpine coniferous forest	9150
<i>HCJ-RN-127</i>	FR	1128	22.34151	138.28	MAN	Alpine coniferous forest	9150
<i>HCJ-RN-160</i>	FR	778	27.72576	331.57	MAN	Alpine coniferous forest	9150
<i>HCJ-RN-161</i>	FR	1060	36.24873	89.36	MAN	Alpine coniferous forest	9150
<i>HCJ-RN-211</i>	FR	1129	31.94474	54.28	MAN	Mountainous beech forest	91P0
<i>HCJ-RN-41</i>	FR	1128	20.72144	162.08	MAN	Alpine coniferous forest	9150
<i>HCJ-RN-94</i>	FR	809	28.0266	58.5	MAN	Mountainous beech forest	91P0
<i>INCODARA_1</i>	IT_CS	1293	25.96793	3.81	MAN	Mountainous beech forest	9220
<i>INCODARA_2</i>	IT_CS	1327	28.85581	352.82	MAN	Mountainous beech forest	9220
<i>INCODARA_3</i>	IT_CS	1469	11.01884	315	MAN	Mountainous beech forest	9220
<i>INCODARA_4</i>	IT_CS	1445	13.61686	321.79	MAN	Mountainous beech forest	9220
<i>INCODARA_5</i>	IT_CS	1446	9.901747	3.99	MAN	Mountainous beech forest	9220
<i>INCODARA_6</i>	IT_CS	1407	11.07448	335.56	MAN	Mountainous beech forest	9220

Plot	Site	Elevation (m a.s.l.)	Slope (%)	Aspect	Management	Forest category	Habitat code
<i>INCODARA_7</i>	IT_CS	1421	16.06701	332.35	MAN	Mountainous beech forest	9220
<i>LURE-01</i>	FR	1348	30.06879	14.55	MAN	Mountainous beech forest	91P0
<i>LURE-02</i>	FR	1372	29.49027	356.46	MAN	Mountainous beech forest	91P0
<i>LURE-03</i>	FR	1488	31.94941	31.5	MAN	Mountainous beech forest	91P0
<i>LURE-04</i>	FR	1444	17.46443	36.29	MAN	Mountainous beech forest	91P0
<i>LURE-RBI01</i>	FR	1505	32.89805	338.36	UNM	Mountainous beech forest	91P0
<i>LURE-RBI106</i>	FR	1567	34.75807	10.14	UNM	Mountainous beech forest	91P0
<i>LURE-RBI17</i>	FR	1432	37.11087	17.92	UNM	Mountainous beech forest	91P0
<i>LURE-RBI174</i>	FR	1525	40.26494	13.91	UNM	Alpine coniferous forest	9150
<i>MAR-3934</i>	FR	1121	26.17686	10.92	MAN	Alpine coniferous forest	9150
<i>MAR-4196</i>	FR	1424	26.47428	242.62	MAN	Mountainous beech forest	91P0
<i>MAR-4813</i>	FR	1079	9.2906	125.11	MAN	Mountainous beech forest	91P0
<i>MAR-5252</i>	FR	1269	24.19034	118.26	MAN	Mountainous beech forest	91P0
<i>MAR-5452</i>	FR	1079	4.23282	289.37	MAN	Mountainous beech forest	91P0
<i>MAR-RBI-M41</i>	FR	946	26.71072	51.84	UNM	Mountainous beech forest	91P0
<i>MAR-RBI-M55</i>	FR	1047	23.45424	54.89	UNM	Mountainous beech forest	91P0
<i>MAR-RBI-M94</i>	FR	895	38.19378	344.12	UNM	Mountainous beech forest	91P0
<i>MOTOLA_4</i>	IT_CS	1172	30.34107	331.48	MAN	Mountainous beech forest	9220
<i>MOTOLA_5</i>	IT_CS	1217	30.22106	321.78	MAN	Mountainous beech forest	9220
<i>MOTOLA_6</i>	IT_CS	1282	31.71704	335.62	MAN	Mountainous beech forest	9220
<i>PRATI_TIVO_1</i>	IT_CS	1465	7.886439	322.13	MAN	Mountainous beech forest	9210
<i>PRATI_TIVO_2</i>	IT_CS	1482	11.9259	274.4	MAN	Mountainous beech forest	9210
<i>PRATI_TIVO_3</i>	IT_CS	1524	11.4467	253.74	MAN	Mountainous beech forest	9210
<i>PRATI_TIVO_4</i>	IT_CS	1514	16.7339	274.64	MAN	Mountainous beech forest	9210
<i>PRATI_TIVO_5</i>	IT_CS	1505	12.90292	278.13	MAN	Mountainous beech forest	9210
<i>RBI-22</i>	FR	979	33.5303	325.81	UNM	Alpine coniferous forest	9150
<i>RBI-28</i>	FR	983	34.89292	123.46	UNM	Alpine coniferous forest	9150
<i>RBI-30</i>	FR	1066	29.62301	105.86	UNM	Mountainous beech forest	91Q0
<i>RBI-35</i>	FR	1000	30.08393	83.92	UNM	Mountainous beech forest	91Q0
<i>S23</i>	FR	1027	32.29788	309.36	MAN	Alpine coniferous forest	9150

Plot	Site	Elevation (m a.s.l.)	Slope (%)	Aspect	Management	Forest category	Habitat code
<i>S41</i>	FR	1070	16.83424	270	MAN	Mountainous beech forest	91Q0
<i>T02</i>	IT_NE	1229	15.64	92.99	UNM	Alpine coniferous forest	9130
<i>T03</i>	IT_NE	1252	21.9	310.58	UNM	Alpine coniferous forest	9130
<i>T04</i>	IT_NE	1040	18.86	293.54	UNM	Alpine coniferous forest	9130
<i>T05</i>	IT_NE	1097	29.6	342.01	UNM	Alpine coniferous forest	9130
<i>T06</i>	IT_NE	1179	26	259.19	UNM	Alpine coniferous forest	9130
<i>T07</i>	IT_NE	1321	4.28	285.93	UNM	Alpine coniferous forest	9130
<i>T08</i>	IT_NE	1306	11.67	309.09	UNM	Alpine coniferous forest	9130
<i>T09</i>	IT_NE	1325	27.9	324.09	UNM	Alpine coniferous forest	9130
<i>T10</i>	IT_NE	1302	21.2	350.95	UNM	Alpine coniferous forest	9130
<i>T11</i>	IT_NE	1287	12.03	289.71	UNM	Alpine coniferous forest	9130
<i>Ven2</i>	FR	899	34.81408	42.67	MAN	Alpine coniferous forest	9150
<i>Ven3</i>	FR	897	18.06062	160.18	MAN	Alpine coniferous forest	9150
<i>Ven4</i>	FR	922	19.21411	125.11	MAN	Alpine coniferous forest	9150
<i>Ven5</i>	FR	874	11.12702	356.61	MAN	Alpine coniferous forest	9150
<i>VENACQUARO_1</i>	IT_CS	1127	23.28201	288.09	MAN	Mountainous beech forest	9210
<i>VENACQUARO_2</i>	IT_CS	1164	21.98443	283.34	MAN	Mountainous beech forest	9210
<i>VENACQUARO_3</i>	IT_CS	1263	14.97071	305.13	MAN	Mountainous beech forest	9210
<i>VENACQUARO_4</i>	IT_CS	1238	16.30585	248.05	MAN	Mountainous beech forest	9210
<i>VENACQUARO_5</i>	IT_CS	1218	25.11314	288.12	MAN	Mountainous beech forest	9210
<i>VENACQUARO_6</i>	IT_CS	1188	25.11314	279.95	MAN	Mountainous beech forest	9210
<i>VENACQUARO_7</i>	IT_CS	1228	22.70407	244.18	MAN	Mountainous beech forest	9210
<i>VTX-8201</i>	FR	1243	30.23133	312.36	MAN	Mountainous beech forest	91P0
<i>VTX-8203</i>	FR	1294	27.61139	328.48	MAN	Alpine coniferous forest	9150
<i>VTX-8601</i>	FR	1339	17.74738	270.73	MAN	Mountainous beech forest	91P0
<i>VTX-8804</i>	FR	1367	7.70998	278.69	MAN	Mountainous beech forest	91P0
<i>VTX-9999</i>	FR	1361	24.57854	46.48	MAN	Mountainous beech forest	91P0
<i>VTX-RBI-15</i>	FR	1168	42.11625	7.77	UNM	Mountainous beech forest	91P0
<i>VTX-RBI-168</i>	FR	1471	43.81056	20.97	UNM	Alpine coniferous forest	9150
<i>VTX-RBI-185</i>	FR	1349	23.84548	45.31	UNM	Alpine coniferous forest	9150

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Bird response to forest structure and composition and implications for sustainable mountain forest management
iForest – Biogeosciences and Forestry – doi: [10.3832/ifer4921-018](https://doi.org/10.3832/ifer4921-018)

Plot	Site	Elevation (m a.s.l.)	Slope (%)	Aspect	Management	Forest category	Habitat code
<i>VTX-RBI-39</i>	FR	1383	17.5504	10.6	UNM	Alpine coniferous forest	9150
<i>VTX-RBI-76</i>	FR	1387	29.08466	44.5	UNM	Alpine coniferous forest	9150

Tab. S2 - Sample sizes (number of plots) for each Habitat Directive habitat type. The figures are derived from the table above.

Habitat code	Number of plots	Percentage of sampling size (%)
9130	20	13.5
9150	29	19.6
9210	35	23.7
9220	10	6.8
91M0	3	2.0
91P0	37	25
91Q0	14	9.5
Total	148	100

Tab. S3 - Main characteristics of the sampling protocols across different sites. Site codes correspond to IT_CS = Centre-South Italy, IT_NE = North-East Italy, and FR = France.

Taxon	Characteristics	Site		
		IT_CS	IT_NE	FR
	Country	Italy	Italy	France
Birds	Sampling unit size shape	1256 m ² circular plot	490 m ² circular plot	31,400 m ² circular plot
	Season/year	Summer 2008, 2013	Summer 2009-2010	Spring-summer 2008-2013
	Methodology	10 to 20-min point count	10-min pointcount	5-min pointcount
	Frequency of sampling:	once	twice a year	twice a year
	Reference	Blasi et al. (2010)	Sitzia et al. (2017)	Bouvet et al. (2016)
Forest structure	Plot size for living trees (DBH>7.5 cm)	concentric 530 and 1,256 m ² circular plots (DBH>10 and 50 cm respectively)	490 m ² circular plots	Combined fixed surface (314 m ²) and fixed angle (2%)
	Plot size for deadwood (mid diameter >10 cm)	Circular areas with a radius of 13 m	logs: line intersect sampling (50 m); stumps/snags: rectangular areas 50x8 m	Combined line intersect sampling (3 X 10m) and fixed surface (1,256 m ²)
	Allometric equations	Tabacchi et al. (2011)	Castellani et al. (1984)	Paillet et al. (2015)

Tab. S4 - List of bird species observed in the survey plots and considered in the study, with their ecological characteristics. The first column reports the species listed in Supplementary Information I of the Birds Directive. Inclusion in the different ecological guilds is defined as reported in the ‘Materials and Methods’ section and according to Wesołowski et al. (2015) and Mikusinski et al. (2018). The main characteristics for categories of the bird-related variables we considered, as defined by Wesołowski et al. (2015) and Mikusinski et al. (2018), are reported in Appendix 2 (see above). The last column reports the number of plots in which each species was observed at least once during the survey. 1=Yes, 0 = No.

Species	Supplementary Information I	Forest generalists	Forest specialists	Aerial foragers	Canopy foragers	Understorey foragers	Ground foragers	Cavity nesters	Canopy nesters	Understorey nesters	Ground nesters	Number of plots
<i>Total</i>	4	51	17	11	43	38	40	20	15	5	6	
<i>Aegithalos caudatus</i>	0	1	0	0	1	1	1	0	0	1	0	6
<i>Carduelis carduelis</i>	0	1	0	0	1	1	1	0	0	0	0	1
<i>Certhia brachydactyla</i>	0	1	0	0	1	1	0	1	0	0	0	16
<i>Certhia familiaris</i>	0	1	0	0	1	1	0	1	0	0	0	45
<i>Cettia cetti</i>	0	0	0	0	0	0	0	0	0	0	0	1
<i>Chloris chloris</i>	0	1	0	0	1	1	1	0	1	0	0	1
<i>Cinclus cinclus</i>	0	0	0	0	0	0	0	0	0	0	0	2
<i>Coccothraustes coccothraustes</i>	0	1	0	0	1	1	1	0	1	0	0	3
<i>Columba oenas</i>	0	1	0	0	1	1	1	1	0	0	0	5
<i>Columba palumbus</i>	0	1	0	0	1	0	1	0	1	0	0	56
<i>Corvus corax</i>	0	1	0	0	0	0	1	1	1	0	0	6
<i>Corvus cornix</i>	0	0	0	0	0	0	0	0	0	0	0	2
<i>Corvus corone</i>	0	1	0	0	0	0	1	0	1	0	0	5
<i>Coturnix coturnix</i>	0	0	0	0	0	0	0	0	0	0	0	1
<i>Cuculus canorus</i>	0	1	0	0	1	1	0	0	0	0	0	42
<i>Cyanistes caeruleus</i>	0	1	1	0	1	1	1	1	0	0	0	18
<i>Dendrocopos leucotos</i>	1	1	1	0	1	1	0	1	0	0	0	3
<i>Dendrocopos major</i>	0	1	1	0	1	1	0	1	0	0	0	20
<i>Dendrocopos minor</i>	0	1	1	1	1	1	1	1	0	0	0	3
<i>Dryocopus martius</i>	1	1	1	0	1	1	1	1	0	0	0	25
<i>Erithacus rubecula</i>	0	1	0	0	0	1	1	0	0	1	0	114
<i>Falco tinnunculus</i>	0	1	0	1	0	0	1	0	0	0	0	1
<i>Ficedula albicollis</i>	1	1	1	1	1	1	1	1	0	0	0	9
<i>Ficedula hypoleuca</i>	0	1	0	1	1	0	1	1	0	0	0	2
<i>Fringilla coelebs</i>	0	1	0	0	1	1	1	0	1	0	0	139
<i>Garrulus glandarius</i>	0	1	0	0	1	0	1	0	1	0	0	21
<i>Lophophanes cristatus</i>	0	1	1	0	1	1	1	1	0	0	0	20
<i>Loxia curvirostra</i>	0	1	1	0	1	0	0	0	1	0	0	8

Species	Supplementary Information I	Forest generalists	Forest specialists	Aerial foragers	Canopy foragers	Understorey foragers	Ground foragers	Cavity nesters	Canopy nesters	Understorey nesters	Ground nesters	Number of plots
<i>Motacilla cinerea</i>	0	0	0	0	0	0	0	0	0	0	0	3
<i>Muscicapa striata</i>	0	1	0	1	0	0	0	1	0	0	0	2
<i>Nucifraga caryocatactes</i>	0	1	1	0	1	1	1	0	1	0	0	4
<i>Oriolus oriolus</i>	0	1	0	1	1	0	1	0	0	0	0	2
<i>Parus major</i>	0	1	0	0	1	1	1	1	0	0	0	42
<i>Periparus ater</i>	0	1	0	0	1	1	1	1	0	0	0	93
<i>Phoenicurus phoenicurus</i>	0	1	0	1	1	1	1	1	0	0	0	5
<i>Phylloscopus bonelli</i>	0	1	1	0	1	0	0	0	0	0	0	4
<i>Phylloscopus collybita</i>	0	1	1	0	1	1	0	0	0	0	1	38
<i>Phylloscopus sibilatrix</i>	0	1	1	0	1	1	0	0	0	0	1	14
<i>Phylloscopus trochilus</i>	0	1	0	1	1	1	0	0	0	0	1	2
<i>Picus viridis</i>	0	1	0	0	1	1	1	1	0	0	0	18
<i>Poecile montanus</i>	0	1	1	0	1	1	1	1	0	0	0	2
<i>Poecile palustris</i>	0	1	1	0	1	1	1	1	0	0	0	35
<i>Prunella modularis</i>	0	1	0	0	0	1	1	0	0	0	1	10
<i>Pyrrhula pyrrhula</i>	0	1	0	0	1	1	1	0	0	1	0	19
<i>Regulus ignicapilla</i>	0	1	1	0	1	0	1	0	1	0	0	39
<i>Regulus regulus</i>	0	1	1	0	1	1	1	0	1	0	0	39
<i>Sitta europaea</i>	0	1	0	1	1	0	1	1	0	0	0	51
<i>Streptopelia turtur</i>	0	1	0	0	1	1	1	0	0	0	0	3
<i>Sylvia atricapilla</i>	0	1	0	0	1	1	1	0	0	1	0	69
<i>Troglodytes troglodytes</i>	0	1	0	0	0	1	1	0	0	0	1	80
<i>Turdus merula</i>	0	1	0	0	1	1	1	0	0	1	0	97
<i>Turdus philomelos</i>	0	1	0	0	1	1	1	0	1	0	0	80
<i>Turdus pilaris</i>	0	1	0	1	1	1	1	0	1	0	0	2
<i>Turdus torquatus</i>	0	1	0	0	1	1	1	0	0	0	1	1
<i>Turdus viscivorus</i>	0	1	0	1	1	1	1	0	1	0	0	32

Tab. S5 - Heatmap matrix showing the number of species shared between bird guilds. Red highlights a small share of bird species, on the contrary, green highlights a large share of bird species.

	Forest generalists	Forest specialists	Aerial foragers	Canopy foragers	Understorey foragers	Ground foragers	Cavity nesters	Canopy nesters	Understorey nesters
Forest generalists	-								
Forest specialists	17	-							
Aerial foragers	11	2	-						
Canopy foragers	43	16	9	-					
Understorey foragers	38	13	6	35	-				
Ground foragers	40	11	9	33	30	-			
Cavity nesters	20	9	6	18	16	15	-		
Canopy nesters	15	5	2	12	8	14	1	-	
Understorey nesters	5	0	0	4	5	5	0	0	-
Ground nesters	6	2	1	4	6	3	0	0	0