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## Supplementary information

Elina Koivisto\*†, Giulia Masoero†, Chiara Morosinotto, Eric Le Tortorec & Erkki Korpimäki 2024: Conspecific density drives sex-specific spatial wintertime distribution and hoarding behaviour of an avian predator. — *Ornis Fennica* 100: 170–187.

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**Table S1 – Total number of stores per individual**

Model selection table for the total number of food stores collected by a hoarding pygmy owl individual. Explanatory variables included age and sex of the owl that hoarded the store (variables “age” and “sex”) and of its nearest neighbor (“NNage” and “NNsex), the vole abundance of the current autumn divided in three groups (“vole.index”) and density of conspecifics at a radius of 6000 m as well as their interactions. All models included year and individual identity of the owl as random factors.

Model	df	logLik	AICc	delta	weight
density_6000m + age + vole.index + sex	8	-561.13	1138.60	0.00	0.309
NNage + density_6000m + age + vole.index + sex	9	-560.79	1140.00	1.40	0.153
NNsex + density_6000m + age + vole.index + sex	9	-561.13	1140.69	2.08	0.109
density_6000m + age + vole.index + sex + density_6000m:vole.index	10	-560.20	1140.94	2.33	0.096
NNage + density_6000m + age + vole.index + sex + NNage:age	10	-560.77	1142.06	3.46	0.055
NNage + NNsex + density_6000m + age + vole.index + sex	10	-560.78	1142.09	3.49	0.054
NNage + density_6000m + age + vole.index + sex + density_6000m:vole.index	11	-559.88	1142.40	3.80	0.046
NNsex + density_6000m + age + vole.index + sex + NNsex:sex	10	-561.11	1142.75	4.15	0.039
NNsex + density_6000m + age + vole.index + sex + density_6000m:vole.index	11	-560.20	1143.03	4.42	0.034
NNage + NNsex + density_6000m + age + vole.index + sex + NNage:age	11	-560.76	1144.16	5.56	0.019
NNage + NNsex + density_6000m + age + vole.index + sex + NNsex:sex	11	-560.77	1144.18	5.58	0.019
NNage + density_6000m + age + vole.index + sex + NNage:age + density_6000m:vole.index	12	-559.87	1144.49	5.88	0.016
NNage + NNsex + density_6000m + age + vole.index + sex + density_6000m:vole.index	12	-559.87	1144.49	5.88	0.016
NNsex + density_6000m + age + vole.index + sex + density_6000m:vole.index + NNsex:sex	12	-560.18	1145.11	6.51	0.012
NNage + NNsex + density_6000m + age + vole.index + sex + NNage:age + NNsex:sex	12	-560.75	1146.26	7.65	0.007
NNage + NNsex + density_6000m + age + vole.index + sex + NNage:age + density_6000m:vole.index	13	-559.85	1146.58	7.98	0.006
NNage + NNsex + density_6000m + age + vole.index + sex + density_6000m:vole.index + NNsex:sex	13	-559.86	1146.59	7.99	0.006
NNage + NNsex + density_6000m + age + vole.index + sex + NNage:age + density_6000m:vole.index + NNsex:sex	14	-559.84	1148.70	10.10	0.002
age + vole.index + sex	7	-568.09	1150.44	11.84	0.001
NNage + age + vole.index + sex	8	-567.63	1151.60	13.00	0
NNsex + age + vole.index + sex	8	-568.09	1152.52	13.91	0
NNage + age + vole.index + sex + NNage:age	9	-567.62	1153.66	15.06	0
NNage + NNsex + age + vole.index + sex	9	-567.63	1153.69	15.09	0
NNsex + age + vole.index + sex + NNsex:sex	9	-568.00	1154.43	15.83	0
NNage + NNsex + age + vole.index + sex + NNsex:sex	10	-567.52	1155.57	16.97	0
NNage + NNsex + age + vole.index + sex + NNage:age	10	-567.62	1155.76	17.16	0
NNage + NNsex + age + vole.index + sex + NNage:age + NNsex:sex	11	-567.51	1157.65	19.05	0

**Table S2 – Total number of prey items**

Model selection table for the total number of prey items collected by a hoarding pygmy owl individual. Explanatory variables included age and sex of the owl that hoarded the store (variables “age” and “sex”) and of its nearest neighbor (“NNage” and “NNsex”), the vole abundance of the current autumn divided in three groups (“vole.index”) and density of conspecifics at a radius of 6000 m, as well as their interactions. All models included year and individual identity of the owl as random factors.

Model	df	logLik	AICc	delta	weight
NNage + NNsex + density_6000m + age + vole.index + sex + NNage:age + density_6000m:vole.index + NNsex:sex	14	-2394.23	4817.48	0.00	0.587
NNsex + density_6000m + age + vole.index + sex + density_6000m:vole.index + NNsex:sex	12	-2397.02	4818.78	1.31	0.305
NNage + NNsex + density_6000m + age + vole.index + sex + density_6000m:vole.index + NNsex:sex	13	-2396.99	4820.86	3.38	0.108
NNsex + density_6000m + age + vole.index + sex + density_6000m:vole.index	11	-2415.38	4853.39	35.92	0
NNage + NNsex + density_6000m + age + vole.index + sex + NNage:age + density_6000m:vole.index	13	-2414.10	4855.08	37.61	0
NNage + NNsex + density_6000m + age + vole.index + sex + density_6000m:vole.index	12	-2415.19	4855.14	37.66	0
NNage + NNsex + density_6000m + age + vole.index + sex + NNage:age + NNsex:sex	12	-2415.83	4856.42	38.95	0
NNsex + density_6000m + age + vole.index + sex + NNsex:sex	10	-2419.49	4859.51	42.03	0
NNage + NNsex + density_6000m + age + vole.index + sex + NNsex:sex	11	-2419.26	4861.15	43.67	0
density_6000m + age + vole.index + sex + density_6000m:vole.index	10	-2422.57	4865.67	48.19	0
NNage + density_6000m + age + vole.index + sex + density_6000m:vole.index	11	-2422.48	4867.59	50.11	0
NNage + density_6000m + age + vole.index + sex + NNage:age + density_6000m:vole.index	12	-2421.48	4867.71	50.24	0
NNage + NNsex + age + vole.index + sex + NNage:age + NNsex:sex	11	-2422.75	4868.13	50.66	0
NNsex + age + vole.index + sex + NNsex:sex	9	-2425.91	4870.24	52.77	0
NNage + NNsex + age + vole.index + sex + NNsex:sex	10	-2425.71	4871.95	54.48	0
NNsex + density_6000m + age + vole.index + sex	9	-2435.06	4888.55	71.07	0
NNage + NNsex + density_6000m + age + vole.index + sex + NNage:age	11	-2433.15	4888.94	71.46	0
NNage + NNsex + density_6000m + age + vole.index + sex	10	-2434.66	4889.85	72.37	0
NNsex + age + vole.index + sex	8	-2439.87	4896.09	78.62	0
NNage + NNsex + age + vole.index + sex + NNage:age	10	-2438.25	4897.03	79.56	0
NNage + NNsex + age + vole.index + sex	9	-2439.54	4897.52	80.04	0
density_6000m + age + vole.index + sex	8	-2441.04	4898.42	80.94	0
NNage + density_6000m + age + vole.index + sex + NNage:age	10	-2439.60	4899.72	82.25	0
NNage + density_6000m + age + vole.index + sex	9	-2440.83	4900.09	82.62	0
age + vole.index + sex	7	-2446.08	4906.43	88.96	0
NNage + age + vole.index + sex	8	-2445.93	4908.21	90.73	0
NNage + age + vole.index + sex + NNage:age	9	-2444.92	4908.26	90.79	0