POPULATION TRENDS OF BIRDS OF PREY IN FINLAND

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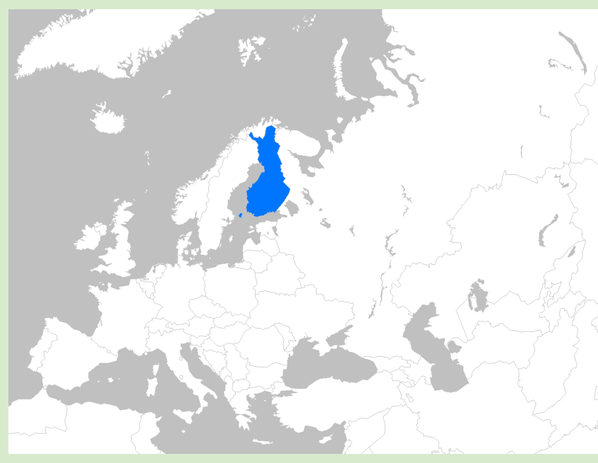


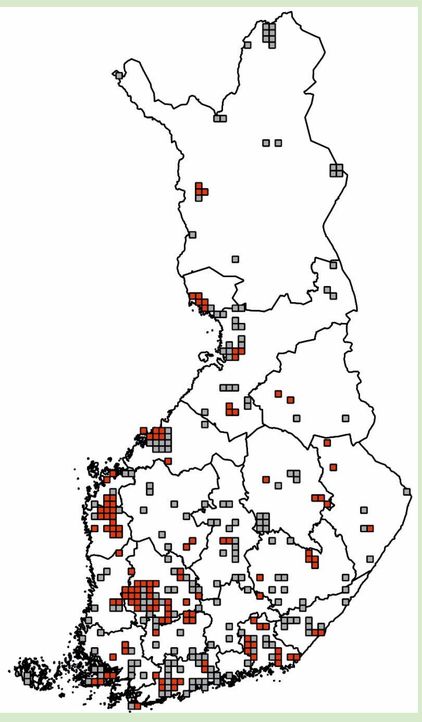


Fig. 1. Raptor Grid study plots studied in 2018 (red) or in 1982–2017 (grey). Areas of local ornithological societies of the BirdLife Finland shown.

Introduction

Environmental conditions affect species on the top of food webs directly, and indirectly through lower levels of the food webs. Trends in predator populations can reveal adverse environmental changes, emphasizing the importance of long-term monitoring of predators.

Material and methods

Common birds of prey are surveyed in Finland by volunteer enthusiasts.

- Raptor Grid study plots since 1982 (100 km^2, 130 annually; Fig. 1). Territories of all raptor species reported. −>Trends with rtrim.
- Raptor Questionnaires since 1986 within local ornithological societies of BirdLife Finland (Fig. 1, ~38 000 nest sites checked annually). −> Breeding parameters.
- Population estimates based on expert enquiries and population trajectory models.

Results

Species[1]	Trend[2], 1982–2018	Clutch size[3], μ	N	Young / active nest[3], μ	N	Failed nests[4] μ (%)	Population estimate
European Honey Buzzard *Pernis apivorus* *	**−2.0%**	1.93	601	1.39	2 216	20.1	2 070
Western Marsh Harrier *Circus aeruginosus*	**2.7%**	3.75	336	2.82	2 641	15.7	690
Hen Harrier *C. cyaneus* *	**−2.5%**	4.70	185	3.31	355	20.1	1 130
Northern Goshawk *Accipiter gentilis*	**−0.6%**	3.15	4 378	2.39	23 684	13.6	4 750
Eurasian Sparrowhawk *A. nisus*	**−1.1%**	4.58	2 494	3.66	7 427	11.4	6 450
Common Buzzard *Buteo buteo* *	**−1.8%**	2.44	1 964	1.87	11 237	12.1	3 860
Rough-legged Buzzard *B. lagopus* *	**−3.4%**	3.36	191	1.72	1 118	27.0	330
Common Kestrel *Falco tinnunculus*	**4.2%**	5.11	24 996	4.19	46 528	7.8	6 000
Merlin *F. columbarius*	0.4%	3.94	237	3.23	567	8.9	3 770
Hobby *F. subbuteo*	**0.9%**	2.72	449	2.08	2 151	11.8	2 600
Eagle Owl *Bubo bubo* *	**−3.0%**	2.38	811	1.55	7 316	24.2	790
Northern Hawk Owl *Surnia ulula*	−1.1%	5.44	182	3.38	440	20.1	360
Pygmy Owl *Glaucidium passerinum* *	**1.1%**	6.42	5 333	5.11	8 987	12.8	2 850
Tawny Owl *Strix aluco*	0%	3.65	8 081	2.67	12 437	17.8	1 300
Ural Owl *S. uralensis*	**0.9%**	2.93	16 868	2.14	23 881	17.2	3 310
Great Grey Owl *S. nebulosa*	0.4%	3.60	414	1.90	1 283	20.4	500
Long-eared Owl *Asio otus*	**−2.3%**	4.36	384	2.67	1 523	8.9	1 300
Short-eared Owl *A. flammeus*	**−3.2%**	6.00	696	3.53	969	19.5	760
Tengmalm's Owl *Aegolius funereus*	**−2.5%**	5.17	12 376	3.00	18 652	26.0	2 720

[1] * = Threatened, Finnish Red List 2019. [2] Long-term population trend. Significant trends in bold, red = decreasing, blue = increasing.
[3] Mean of the annual averages in 1986–2018. [4] Proportion of unsuccessful nests, mean of the annual averages in 1986–2018.

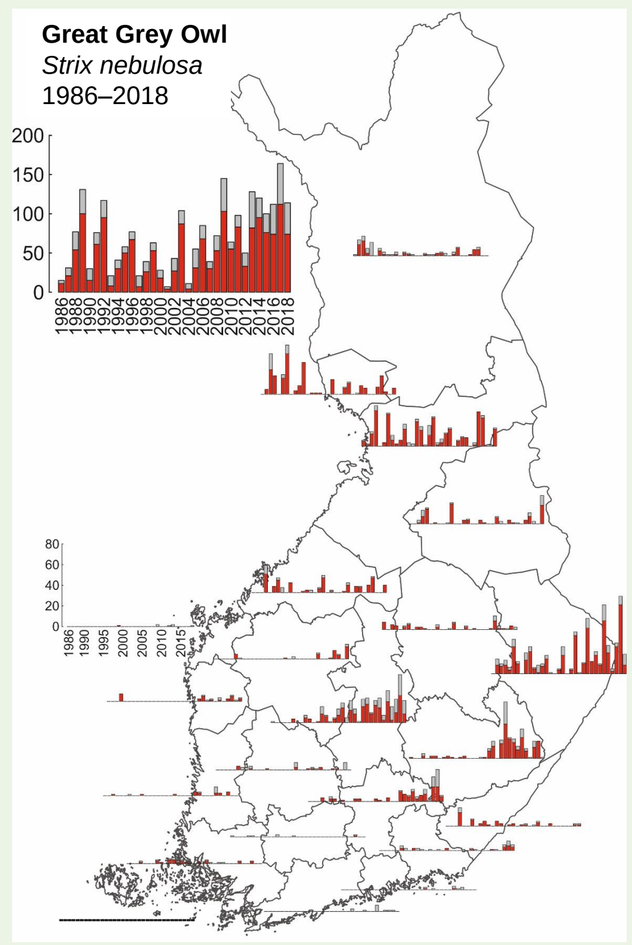
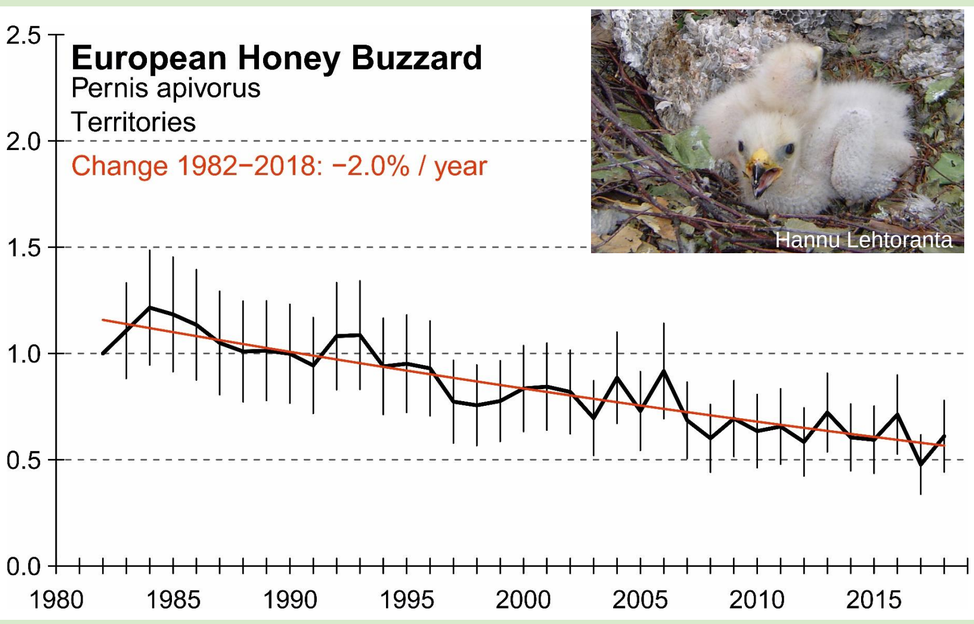


Fig. 3. Numbers of occupied territories (bars) and breeding attempts (red parts of the bars) of the Great Grey Owl.

- Decrease: raptors of mature forest (e.g. Honey Buzzard, Tengmalm's Owl; Fig. 2) and vole-eating raptors of semi-open habitats (Hen Harrier, Rough-legged Buzzard, Eagle Owl).
- Increase: raptors benefiting from nest boxes (Common Kestrel, Pygmy Owl, Ural Owl).
- Trends uncertain when populations fluctuate due to vole cycles (e.g. Great Grey Owl, Fig. 3).



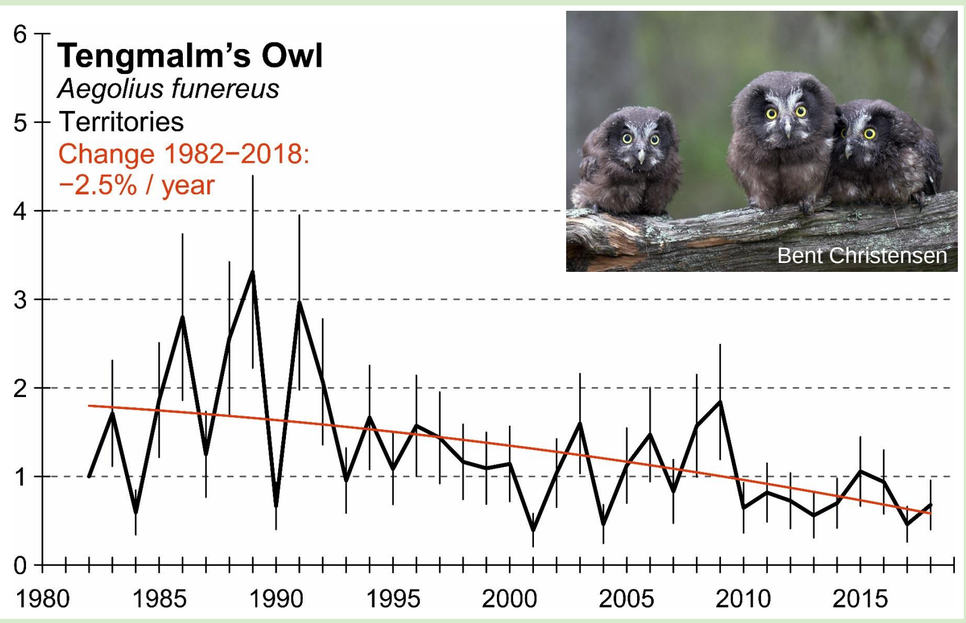


Fig. 2. Annual population trend indices of the Honey Buzzard and Tengmalm's Owl in 1982–2018.

Conclusions

Raptors of mature forest have declined likely due to intensive forest management and decrease in area of old forests. Eagle Owl declined when easily available food disappeared after closures of small dumping sites. Reductions of other vole-eating raptors may relate to lower food levels or unknown reasons during migration or in wintering grounds.

Forest Raptor Project coordinated by LUOMUS aims to support breeding of hawks in managed forests. It relies on voluntary conservation of nest sites.

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