



International conference

3B+P 2026

**Current status of raptor research
in the Baltic region**

3–5 March 2026

„Medņuriests”, Madona, Latvia

**Programme
and
abstracts**

Organising committee:

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Cover photo credits: Rimgaudas Treinys



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Programme

3 March 2026 (Tuesday):

14:00–15:00 *Arrival and registration:*

15:00 *Welcome note*

15:10–18:00 *Presentations*

15:10 **Uģis Bergmanis:** Long-term monitoring of the Lesser Spotted Eagle in Latvia, in the core area of its distribution range

15:30 **Gintarė Grašytė:** Distribution, abundance, reproduction, nesting and feeding habitats, and mortality causes to Osprey in Lithuania

15:50 **Aigars Kalvāns:** Osprey in Latvia

16:10 **Jānis Ūze:** The White-tailed eagle in Latvia – current status and threats

16:30 *Coffee / tea break*

17:00 **Saulius Rumbutis:** Long-term dynamics of the Tawny Owl local population in Central Lithuania, change of individual traits, habitat use, and diet during breeding season

17:20 **Saulis Skuja:** On the distribution edge: Ural Owl in Lithuania

17:40 **Paweł Mirski:** Decline of Eagle Owl in Podlasie Region (NE Poland)

18:00–19:00 *Dinner*

19:00–23:00 *Discussions*

4 March 2026 (Wednesday):

9:30–13:00 *Presentations*

9:30 **James M. E. Firkins:** Spatial and temporal variation of demographic parameters of the White-tailed Eagle in Lithuania

9:50 **Freddy Rohla:** A multi-method assessment of apparent survival and population turnover in Estonian Golden Eagles

10:10 **Saulius Rumbutis:** Mortality patterns of the Tawny Owl in Lithuania as revealed by data collected in the Museum of Zoology for 40 years

10:40 **Edgars Ledīņš:** Common Kestrel in Latvia – nest box monitoring, ringing and tracking

11:00 *Coffee / tea break*

11:30 **Pelle Mellov**: Raptor monitoring in Estonia

11:50 **Krzysztof Henel**: Rare birds of prey and owls of the Biebrza Valley (NE Poland) – changes in breeding population numbers

12:10 **Paweł Białomyzy**: The Eurasian Pygmy Owl population in the Białowieża Forest

12:30–14:00 *Lunch*

14:00–18:00 *Presentations*

14:00 **Gunnar Sein**: The population of the Golden Eagle is declining in Estonia

14:20 **Uģis Bergmanis**: Using webcam to characterise nesting biology and diet of the Golden Eagle at a nest in the north-eastern part of Latvia

14:40 **Deivis Dementavičius**: Diet of the White-tailed Eagle during breeding period shows strong difference between habitats, but little change over time in Lithuania

15:00 **Girts Strazdins**: Dynamics of forest stand age structure at Lesser Spotted Eagle nesting sites

15:30 *Coffee / tea break*

16:00 **Otars Opermanis**: Natal dispersal of Northern Goshawk in urban environment

16:20 **Jaan Grosberg**: Foraging habitat selection of the Eurasian Goshawk in urban landscapes

16:40 **Ülo Väli**: Diverse foraging strategies of Eurasian Goshawks in the Białowieża Forest, north-eastern Poland

17:00 **Paweł Mirski**: Homing in translocated Goshawks

18:00–19:00 *Dinner*

19:00– 00:00 *Sauna and discussions*

5 March 2026 (Thursday):

9:30–12:00 Presentations

9:30 **Rimgaudas Treinys:** Just a few among many: status of Greater Spotted Eagle and hybridisation with Lesser Spotted Eagle in Lithuania

9:50 **Ülo Väli:** Population dynamics and hybridisation of the Greater Spotted Eagle in Estonia

10:10 **Urmas Sellis:** Above the borders: conservation of Greater Spotted Eagles at breeding and wintering areas, and on its flyway

10:30 Coffee / tea break

11:00 **Jānis Kuze:** Four years since completion of project LIFE AQPOM – project results and further development

11:20 **Triin Leetmaa:** Balancing railway development and raptor conservation: Rail Baltic Estonia's experience

11:40 **Julius Morkūnas:** Wind energy expansion and raptor habitat use: Insights from GPS-tagged birds

12:00– 12:30 Final conclusions

12:30 Departure

Using webcam to characterise nesting biology and diet of the Golden Eagle at a nest in the north-eastern part of Latvia

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Breeding ecology of the Golden Eagle (*Aquila chrysaetos*) was studied using a webcam at a nest in 2020 and 2025. Intensive nest building began in February, the male provided the nest building material in 79% of cases. The first egg was laid on March 26 and 28, incubation lasted 39–41 days, the first chick hatched on May 6–10. During incubation, the male brought food to the ground near the nest, where the female was eating it; in the absence of the female at nest, the male incubated. During the incubation period, food was delivered to the nest on average 1.5 times per day. 78% of the food was delivered by the male. 69% of the food was made up of birds, 31% of mammals. The most important prey animals were Galliformes (Black Grouse and Western Capercaillie, 23%) and Charadriiformes (20%), as well as Carnivora (young Raccoon Dogs and Foxes, as well as Pine Martens, 13%) and Anseriformes (mainly Mallard, 13%). The proportion of the most important prey animals varied between years. In 2020, Charadriiformes accounted for 34% and Galliformes for 15%, while in 2025 this proportion was the opposite, 12% and 28%, respectively. The young eagle spent 88 days in the nest and fledged on August 3. For the first ten days after fledging, the young eagle spent most of its time on the ground close to the nest, where it got food. Starting on the tenth day after fledging, the young eagle visited the nest every day until the end of the live broadcast on September 3.

Long-term monitoring of the Lesser Spotted Eagle in Latvia, in the core area of its distribution range

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The annual number of Lesser Spotted Eagle (*Clanga pomarina*) pairs present and nesting success (number of young birds in nests at the time of the census) have been counted at six plots in different regions of Latvia. The sample plots are 100 km² in size, except one plot, which is 460 km² in size. The number of survey years varies between plots and is 38 (Bukaiši), 32 (Murmastiene), 24 (Žūkļis), 19 (Pāle), 18 (Mazgramzda) and 5 years (Gāguļi). The Latvian population of Lesser Spotted Eagles is estimated at around 4000 pairs and has been stable. However, the trends in the number of pairs present have varied between plots and years. Long- and medium-term trends are stable, whereas short-term trend is uncertain with downward slope ($S = 0.9837$). In fixed-area plots the number of young birds has been stable in the long term, moderately increasing in the medium term ($S = 1.0345$, $p < 0.05$) and uncertain with an upward slope in the short term ($S = 1.0032$). The trend of successful breeding pairs has also been stable. Currently, the Lesser Spotted Eagle population in Latvia is stable. However, a population decline cannot be ruled out given the intensification of forestry and particularly agriculture, which is affecting its foraging habitats.

The Eurasian Pygmy Owl population in the Białowieża Forest

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The Białowieża Forest constitutes an important habitat for the Eurasian Pygmy Owl (*Glaucidium passerinum*). At the turn of the 21st century, an increase in population size was recorded both in the Białowieża Forest and at the national scale. In Białowieża, a shift in habitat preferences was also observed. Formerly, the species was associated primarily with coniferous forests; at present, Pygmy Owls predominantly inhabit oak–hornbeam forests and wet forest habitats.

Between 2013 and 2024, surveys of varying intensity were conducted on sample plots to assess the current size of the Pygmy Owl population in Białowieża. Concurrently, studies on the species' ecology were carried out. Results from the Polish part of the Białowieża Forest in 2013 indicate that over approximately 30 years the population increased sixfold, reaching about 280–300 breeding pairs. Subsequent studies revealed a further, albeit relatively small, increase in population size. The current population is estimated at approximately 300–340 pairs, with an average density exceeding 50 pairs per 100 km².

Ecological studies revealed a wide range of utilised forest habitats and nesting tree species. In addition, information was obtained on breeding phenology, productivity, reuse of nest cavities, and home range size.

Diet of the White-tailed Eagle during breeding period shows strong difference between habitats, but little change over time in Lithuania

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Diet of the White-tailed Eagle (*Haliaeetus albicilla*) during breeding period was studied by analysis of remains collected during ringing of nestlings in 1997–2018. Fish were the most common prey, by number, comprising 62% of the sampled prey individuals, while 24% of the prey items being water birds, 10% terrestrial birds and 4% mammals. The Northern Pike was the most abundant prey species, constituting 19% of all the identified prey (n = 2272) and being detected in 47% of the nests (n = 302). The second most abundant fish species was Common Bream (10%). Eurasian Coot (7%) and Mallard (4%) were the most frequent bird species in the diet. The proportions of the main prey groups strongly varied among the samples collected from nests located in different habitats, with a general pattern of a decreasing share of fish and an increasing share of birds being observed from coastal to terrestrial habitats. The occurrence of Northern Pike in the nests of eagles significantly increased during the 2005–2018, but occurrence of other prey groups did not change significantly. The Levins' index of dietary niche breadth did not change between 2005 and 2018. Overall, our data did not indicate food limitation during population increase. In 2024 and 2025 the video recording of breeding pair was performed, and preliminary results about food deliveries are reported.

Spatial and temporal variation of demographic parameters of the White-tailed Eagle in Lithuania

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After being absent in Lithuania since the mid-20th century, the first breeding pairs of White-tailed Eagles (*Haliaeetus albicilla*) were recorded in the mid-1990s, and the population steadily increased to 250 pairs by 2025. The breeding range expanded and became increasingly saturated due to rising local breeding densities. In 2020, the mean nearest-neighbour distance was $2.1 \text{ km} \pm 1.8 \text{ SD}$ in coastal study area and $8.9 \text{ km} \pm 4.3 \text{ SD}$ in inland study area (Central Lithuania). Between 2005 and 2020, breeding success averaged 62.8%, with a mean of $1.07 \pm 0.9 \text{ SD}$ nestlings per breeding attempt ($n = 606$). Reproductive output did not differ between coastal and inland areas, and no deterioration was detected despite increasing density. Between 1988 and 2023, 1,249 White-tailed Eagles were ringed, of which 98.1% were nestlings hatched in Lithuania. The mean recovery distance was 128 km, with most young (71%) and adult birds (69%) remaining within the country. Recovery distances were age-independent in Lithuania, with similar distances for immature ($137 \text{ km} \pm 231 \text{ SD}$) and adult birds ($111 \text{ km} \pm 154 \text{ SD}$), as well as among immature age classes (1–4cy). Eagles hatched in food-rich coastal areas dispersed significantly shorter distances than inland birds. Recovery distances have decreased markedly over recent decades, with movements increasingly concentrated near hatching sites. Survival rates were high ($0.92 \pm 0.02 \text{ SE}$), with no effects of age or sex, and no long-term decline, although first-year fidelity increased. Mortality patterns differed by age, with human-related causes more frequent in young birds. Overall, electrocution and powerline collisions were the main threats, and mortality was spatially clustered around fishponds.

Distribution, abundance, reproduction, nesting and feeding habitats, and mortality causes to Osprey in Lithuania

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The Osprey (*Pandion haliaetus*) is a rare breeding species in Lithuania, with the population estimated at approximately 40–50 pairs in 2025. Despite short-term fluctuations in abundance in certain areas, the national population has remained essentially stable for more than two decades. Most pairs are concentrated in the north-eastern to south-eastern parts of the country. Pairs establish their nesting sites in a wide range of habitats, including raised bogs, large dry coniferous forests, and medium to small mixed forests. Some pairs also nest on artificial structures, such as electricity poles, often in close proximity to human settlements. In recent years, GPS transmitters have been applied to study Osprey home ranges and feeding habitats. Preliminary results based on the tracking of a small number of adults females and males indicate regular feeding flights up to approximately 25 km from nesting sites. Initial analysis of tracking data, and video recordings from one nest during the breeding season, shows a wide range of feeding habitats used by Ospreys, including lakes, wetlands, rivers, commercial fishponds and small ponds in homesteads. Available data on productivity from before the 2000s and from recent years are reported. A recent analysis of Osprey mortality records collected since the early 1970s in Lithuania indicates that electrocution and collision with power lines are major mortality causes for the species. This pressure, however, is individual age-dependent with a more pronounced effect on adults than on young birds.

Foraging habitat selection of the Eurasian Goshawk in urban landscapes

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Urban environments are increasingly used by some avian predators, yet the mechanisms shaping their space use within cities remain incompletely understood. We investigated habitat selection, and interactions with human activity in urban-adapted Eurasian Goshawks (*Astur gentilis*) using GPS telemetry data from 22 individuals across three towns in Poland and Estonia (Białystok, Hajnówka and Tartu). We studied which urban features were selected during foraging and how habitat use varied across seasons.

Across all towns, Goshawks showed strong preference with wooded areas, shrublands, and multi-family housing, while single-family housing and traffic-dominated areas were neutral or avoided. Distance-based predictors revealed consistent spatial patterns: Goshawks generally preferred to be closer to woods in all towns, and farther from roads.

The results presented are preliminary and aim to provide initial insights into habitat selection and movement ecology of Goshawks using urban landscapes.

Rare birds of prey and owls of the Biebrza Valley (NE Poland) – changes in breeding population numbers

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The presentation presents trends in the abundance of breeding populations of rare raptors and owl species associated with forest ecosystems in the Biebrza River Valley in the years 1989–2025. The following species are discussed: Greater Spotted Eagle (*Clanga clanga*), Lesser Spotted Eagle (*Clanga pomarina*), White-tailed Eagle (*Haliaeetus albicilla*), Short-toed Snake Eagle (*Circaetus gallicus*), Red Kite (*Milvus milvus*), Black Kite (*Milvus migrans*), Peregrine Falcon (*Falco peregrinus*), Eurasian Eagle-Owl (*Bubo bubo*), Eurasian Pygmy Owl (*Glaucidium passerinum*), as well as the Black Stork (*Ciconia nigra*).

Osprey in Latvia

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Monitoring of Osprey (*Pandion haliaetus*) in Latvia started in the end of 1980s. Then, after a pause of more than 10 years, the study of the species, monitoring and providing nesting sites protection restarted in 2007. Current estimate of the Osprey population in Latvia is 230–240 pairs.

In 2025, 141 territories were occupied and 83 nests were successful. The dynamics of the number of occupied territories and successful nests of Osprey in the long-term period (2007–2025) is significantly increasing. In turn, the trend in the short-term period (2017–2025) for the number of occupied territories and successful nests is unclear. Breeding success in 2025 was 2.11 young per successful nest and 1.25 young per occupied territory.

Since 2007, Ospreys in Latvia have been banded with plastic colour rings (red with white code) – in total 3132 nestlings were ringed, from which 98% with colour rings. Information has been received about 590 recoveries of ringed Ospreys in Latvia; 93% of all recoveries are from live birds - colour ring read.

Also, tracking devices have been used for 10 adults Ospreys (5 males and 5 females) and 4 juveniles (3 males and one female) to understand their habitat use, territories and migration.

Four years since completion of project LIFE AQPOM – project results and further development

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"Project "Conservation arrangements for Lesser spotted eagle in Latvia" (LIFE AQPOM) was implemented by Latvian Fund for Nature (LFN) and associated partners in 2016-2021. It was primarily focused on large scale inventory of breeding sites of Lesser spotted eagle (*Clanga pomarina*; LSE), followed by activities of providing of nest protection. During four field seasons (2017-2020), 543 previously unknown LSE nests were found; additionally, 1869 nests of unknown or various other (known) ownership were found. To provide the necessary protection, 526 microreserve (MR) proposals were submitted to responsible authorities, additionally, 22 MR proposals were submitted by State Forest company AS "Latvijas valsts meži" with LFN being the second submitter. From submitted proposals, 470 are approved and 48 rejected by now. As on 30.07.2021, there were 754 MR designated for LSE in Latvia.

Project has identified significant problems in protection of dispersedly breeding bird species in Latvia. In every single field season since 2017, at ca. 10% of found nests inappropriate activities were recorded. That includes forest cutting at wrong season, nest trees prepared for logging, too small group of retention trees planned around nest tree, etc. Main problem behind that – lack of proper evaluation of forest biodiversity values prior to the forestry activities (only economic value is evaluated during the forest inventory) and shortages of existing compensation schemes.

Since the project completion, LFN has lobbied the improvements in compensation schemes, submitted a complaint to the European Commission about the shortages in protection of LSE, as well as continued its work in preparation of MR proposals. Several court cases initiated by the LFN during the project years are completed by now with positive outcome. The main problems, as listed in the Species action plan, still remain unsolved.

The White-tailed eagle in Latvia – current status and threats

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Growth of the population of White-tailed Sea eagle (*Haliaeetus albicilla*; WTE) has been monitored in Latvia since the early 1970ies, when first nest has been found after approximately 15 years of absence with no breeding pairs known. Considerable increase in numbers of breeding pairs has been observed since the beginning of 21st century and currently the breeding population is estimated at 150–200 breeding pairs (143 occupied nests known in 2025). Simultaneously, a decline in breeding success has been observed, with less than one fledgling per occupied nest recorded on average in most years recently. Two thirds of the breeding population are located in the W part of the country (Kurzeme and W part of Zemgale region).

With population expanding, birds are starting to colonize new types of landscape (e.g. small forest patches within large industrial farming areas). An increasing proportion of nests are located in retention trees in clear felled areas (42% of occupied nests in 2025). Currently trees are the only known nest supports (no breeding recorded on other structures).

There are well established means in the protection of breeding grounds, although they do not safeguard from the human made disturbance not related to the forestry activities. An emerging threat to the WTE's is a rapid development of wind power plants. Another of the problems is an intoxication with lead.

Since 2012 one up to two nests annually are observed by the webcams, with nest near Durbe observed since the beginning of 2015 (nest has collapsed three times since then and was rebuilt in all occasions).

Monitoring of the breeding population since 2014 is supported by the state forest company AS "Latvijas valsts meži" (LVM).

Common Kestrel in Latvia – nest box monitoring, ringing and tracking

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Nest boxes for Common Kestrel (*Falco tinnunculus*) were first placed in Latvia in 2006, but it was only in 2011 that this species was proven to nesting in the nest boxes. Most of the chicks were ringed using colour rings, and trail-cams were increasingly used to monitor presence of ringed birds and the reasons of nests being destroyed.

In 2025, of the 105 Kestrel nest boxes installed, 33 were occupied by Kestrel. 25 nests were successful, 5.40 nestlings for successful nest and 4.22 nestlings for occupied nest. 127 nestlings were colour-ringed in 2025.

It was observed in trail-cams that some nests are destroyed by Pine Marten. Therefore, an agreement with *AS Sadales tikls*, started in 2024 to install nest-boxes at wooden electricity poles in the middle of field. In 2025, 14 nest-boxes installed at electricity poles were used by Kestrel.

Since 2014, Kestrels in Latvia have been banded with plastic colour rings (black with white code) – in total 633 birds were ringed. Information has been received about 85 recoveries of ringed Kestrels in Latvia.

In 2025 tracking devices used for 7 adults (one male and 6 females) and 46 nestlings to understand territories and migration.

Balancing railway development and raptor conservation: Rail Baltic Estonia's experience

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Rail Baltic Estonia (RBE) is responsible for the development and implementation of the Estonian section of the *Rail Baltic* railway. Aiming to set a new standard for integrating environmental measures into large-scale infrastructure projects, RBE's activities are based on comprehensive environmental impact assessments that have guided route selection as well as subsequent design and construction decisions. The impacts on birds of prey, including the Lesser Spotted Eagle (*Clanga pomarina*), White-tailed Eagle (*Haliaeetus albicilla*), European Goshawk (*Accipiter gentilis*), and Eagle Owl (*Bubo bubo*), have been considered throughout the planning and construction phases.

This presentation provides an overview of the mitigation measures applied within the *Rail Baltic* project in Estonia, including temporal restrictions, adapted construction practices, and habitat-based measures. The role of monitoring during the construction phase is discussed, highlighting a dynamic management approach in which monitoring results are continuously used to refine mitigation measures. The experiences presented offer practical insights for raptor conservation in the context of large-scale infrastructure development.

Raptor monitoring in Estonia

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The Estonian raptor monitoring programme focuses on collecting data on the breeding and wintering population densities of the more common species, as well as on their breeding success. Using a standardised method, the permanent summer time monitoring areas cover approximately 3.3% of Estonia's territory. Although technological developments have improved the quality of monitoring, the system still does not match the ideal. New population estimates and trends indicate that several species require more attention or special action – but how should this be done?

Homing in translocated Goshawks

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To mitigate predation pressure on threatened and declining Western Capercaillie (*Tetrao urogallus*) populations in north-eastern Poland, Eurasian Goshawks (*Accipiter gentilis*) were captured during autumn and winter and translocated approximately 100 km south. Between 2020 and 2024, eighteen adult goshawks (twelve males and six females) were equipped with GPS loggers to monitor their post-translocation movements. This study aimed to determine whether translocation effectively deters goshawks from returning to focal Capercaillie habitats; and if a resident raptor species like the goshawk is capable of homing when displaced over an unfamiliar distance and direction—likely beyond its cognitive map. Results showed a strong sex-related difference in outcomes. Males experienced high mortality after translocation, with only a few surviving until spring. However, those that did survive were more likely to attempt homing. In contrast, females had significantly higher survival rates but displayed low homing tendencies. Most females formed new pair bonds and settled far from their original capture sites. Only two males and one female returned to their original forest complex. Additionally, three females and one male established breeding territories in distant areas unrelated to their capture sites. Right after translocation, movements appeared directionless and dispersed with no individuals returning immediately. These findings suggest that female translocation may effectively reduce predation on Capercaillie by encouraging resettlement elsewhere. However, male translocation poses a risk due to high mortality, despite a slightly higher tendency to return than females.

Decline of Eagle Owl in Podlasie Region (NE Poland)

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Eagle Owl (*Bubo bubo*) was a rare breeder in Podlasie region, reaching 35-40 pairs in the 1980's and 1990's. The largest population in the region was located in Biebrza Marshes and reached ca. 25 pairs. In 2017 we started to monitor its population with the use of passive acoustic monitoring devices. We found the species declining, especially in its main stronghold, the Biebrza Marshes, where the species is close to extinction. Other populations in the region and further, in the lowland Poland are also declining. The predation on Eagle Owl broods is suspected as the main cause of the decline.

Wind energy expansion and raptor habitat use: Insights from GPS-tagged birds

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Renewable energy development in the Baltic region is accelerating, and wind turbines (WTGs) are increasingly being planned in areas where potential conflicts with birds of prey may arise. In Lithuania, we tagged individuals of several raptor species—Western Marsh Harrier (*Circus aeruginosus*), Lesser Spotted Eagle (*Clanga pomarina*), and Common Buzzard (*Buteo buteo*)—at four sites either before or during WTG construction. Our aim was to assess potential effects of WTG operation on raptor behaviour and habitat use. We compared home range sizes before turbine operation with those after the WTGs became active. The tagged birds did not exhibit large scale avoidance of the newly constructed turbines and generally maintained similar home range sizes. However, evidence of micro avoidance behaviour was observed, with birds tending to avoid areas in close proximity to the WTGs

Natal dispersal of Northern Goshawk in urban environment

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Natal dispersal is defined as the unidirectional movement of an individual from its natal site to the area where it breeds for the first time. In the Northern Goshawk (*Accipiter gentilis*) this means the line between the natal nest and its surroundings to the location where the offspring has demonstrated its first breeding attempt. The latter in most cases is the terminal one, because this species is known as strictly sedentary, unless loss of a partner or a habitat force to search for alternative breeding opportunities.

The study is based on 12-year data of ringing of nestlings and subsequent ring recoveries in a greater Riga area, Latvia. The study area represents a highly urbanized habitats where Goshawks have developed markedly different breeding strategies than those goshawks residing in non-urban environments. The information about Goshawk dispersal, as for a top predator and only raptor species with established population in Riga, is interesting from both ecology and conservation points of view.

We shall present preliminary findings on distance, direction and time of natal dispersal of 98 unique birds born in Riga. Also, we are happy to discuss most suitable statistical approaches to be used for this dataset. This is the first report from a wider continuous goshawk research program in Riga. We would be interested to hear if similar research is undertaken elsewhere in the Baltic region and establish possible contacts.

A multi-method assessment of apparent survival and population turnover in Estonian Golden Eagles

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Adult survival and population turnover are key indicators of demographic change in long-lived species. Although various marking methods have been used to estimate these parameters, few studies have incorporated a multi-method approach and compared their outcomes directly. Here, we used three complementary approaches—capture–recapture data from colour-ringed birds, genetic analysis of non-invasively collected moulted feathers from adults, and relatedness-based analysis of nestling DNA—to assess survival and turnover in Estonian Golden Eagle (*Aquila chrysaetos*) population. Apparent annual survival was broadly consistent across methods: 0.83–0.88 for colour-ringed birds, 0.81–0.87 for adults identified from feathers, and 0.83–0.85 from relatedness analysis. Turnover estimates varied more strongly among methods, with the highest minimum/maximum rates from adult genetic data (0.11/0.53) and lower rates from colour rings (0.05/0.26) and relatedness (0.06/0.21). Overall, all methods produced similar survival and turnover estimates for both sexes. Long-term colour-ringing data over the past 20 years indicated markedly lower first-year survival (0.27), compared with older birds (0.91), and a significant recent decline in survival of adults. Integrating traditional ringing with modern genetic analysis provides a robust framework for monitoring demographic processes and continued long-term monitoring strengthens our ability to detect and interpret population trends for conservation management.

Long-term dynamics of the Tawny Owl local population in Central Lithuania, change of individual traits, habitat use, and diet during breeding season

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The Tawny Owl (*Strix aluco*) population in the Dotnuva forest has been studied since 1978. The number of breeding pairs fluctuated annually (0–14, median 6 pairs), with two pronounced phases: a population crash in the early 2000s and a peak around 2021. The characteristics of breeding females changed significantly over time in terms of age (i.e. varied without trend), plumage coloration (i.e. grey females became rarer), and wing and tail length (decreased since 2000s), while body mass remained relatively constant. The annual apparent survival probability of the female Tawny Owls (model averaged values between 0.71 and 0.73) did not show significant temporal change. Breeding performance in terms of start of incubation (mean 22 of March), clutch (mean 3.6 eggs) and brood size (mean 2.5 nestlings) exhibited different temporal patterns but generally lacked long-term directional trends. Since the early 2000s, owls tend to occupy nest boxes located deeper within the forest. Diet composition also changed markedly: the proportion of *Microtus* voles declined significantly from the 1990s onward, whereas the detection of birds in nest boxes increased.

Mortality patterns of the Tawny Owl in Lithuania as revealed by data collected in the Museum of Zoology for 40 years

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Data on 250 Tawny Owl (*Strix aluco*) dead individuals found in the period 1985–2024 was available in Kaunas T. Ivanauskas Museum of Zoology. We analysed the distribution of individuals differing in sex, age, morphs (grey, intermediate, brown) and body mass and analysed their variation among four decades and three seasons (breeding, autumn, winter). Probability of grey plumage-coloured owls among dead individuals decreased since 2005, however, it remained similar between 1985 and 2004. Females were slightly more abundant among dead individuals (56.4%, $n = 234$). Moreover, female proportion among dead individuals varied between seasons with the highest values observed in autumn (65%) and smallest in winter (48%). Adult owls (≥ 3 years old) were less common (42.7%, $n = 185$) than younger birds. Our data indicates a tendency of nearly significant variation of age*sex among individuals collected outside the breeding season. Namely, among owls collected during autumn months dominated young females, but adult males were rarest. During winter months different aged owl sexes were more similarly represented among dead individuals. Most frequent (50% of cases) cause of mortality was road collision. The proportion of individuals who died because of road collisions was similar for the first two decades, but increased significantly during 2005–2014. Interestingly, road killed owls proportion remained similar in 2015–2024 as in 2005–2014 despite traffic intensity increasing by at least 1.6-fold since early 2000s. Road collision probability significantly differed between seasons with the lowest values observed during winter for the entire study period.

The population of the Golden Eagle is declining in Estonia

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In the autumn of 2025, the NGO Eagle Club (*MTÜ Kotkaklubi*) reduced the estimate of Golden Eagle (*Aquila chrysaetos*) population size in Estonia to 45–50 breeding pairs. The long-term moderate increase in the population of Golden Eagles in Estonia has now stopped. It is impossible to pinpoint a single specific cause for this decline. There are likely multiple factors, whose simultaneous occurrence has led to the decrease in the species' numbers. These factors include avian influenza, an increase in the population of the White-tailed Eagle (*Haliaeetus albicilla*), resulting in greater competition for habitat use, and the continued use of ammunition containing lead.

The situation is further complicated by the fact that juvenile mortality is higher than normal, which means that vacant positions left by adult birds are not being filled by new juveniles, resulting in long-active territories remaining unoccupied.

To obtain more reliable knowledge about the causes of the decline in the Golden Eagle population in Estonia, it is necessary to continue various population studies of the species. The main approaches include telemetry of juvenile and adult birds, genetic research, and the use of trail cameras at nest sites. In addition, a focused effort is needed to determine the occupancy status of territories that have been recently abandoned.

Above the borders: conservation of Greater Spotted Eagles at breeding and wintering areas, and on its flyway

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The Greater Spotted Eagle (*Clanga clanga*) is one of the most threatened eagle species in Europe. It is considered 'Vulnerable' at global and European level and 'Critically Endangered' in the European Union. To improve the status of the species in the EU, the LIFE project 'Above the borders: conservation of Greater Spotted Eagles at breeding and wintering areas, and on its flyway' is carried out in 2023–2027. The project is led by the Poznan University of Life Sciences and executed with the Estonian University of Life Sciences, Biebrza National Park, The Bulgarian Society for the Protection of Birds and the Turkish Nature Research Society. The project enhances population monitoring and individual safe guarding, seeks for better understanding of species' ecology, hybridisation and mortality causes, and implements various conservations activities. In the presentation, half-time results of the project will be introduced, focusing on the results achieved in Estonia.

On the distribution edge: Ural Owl in Lithuania

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Only a few records of the Ural Owl were documented in Lithuania during the 20th century. In 2001, the species was recorded in the Biržai Forest in northern Lithuania, close to the Latvian border. Since then, new breeding and suspected breeding locations have been identified in the Biržai Forest, as well as in the north-eastern and eastern parts of the country. The species reached its peak abundance between 2010–2016, when the highest number of breeding pairs was recorded in the Biržai Forest, and breeding was also confirmed in other forests, leading to a national population estimate of 50–80 pairs. However, based on the number of known breeding cases in the core area of the Ural Owl in Lithuania (i.e. the Biržai Forest) and in other locations, the species' abundance has declined in recent years; therefore, the current population size is estimated at 30–50 pairs. The Ural Owl has been regularly studied in the Biržai Forest for more than two decades; therefore, we present an overview of the species' breeding habitats, productivity, prey delivered to nestlings, and available data on the age of breeding females in Lithuania.

Dynamics of forest stand age structure at Lesser Spotted Eagle nesting sites

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A significant share of the European population of the Lesser Spotted Eagle (*Clanga pomarina*) breeds in Latvia. Between 2016 and 2021, the project “LIFE AQPOM: Conservation arrangements for Lesser Spotted Eagle in Latvia” identified and monitored more than 500 previously unknown nesting sites, generating a large dataset that has not yet been systematically analysed. This study examines the age structure of forest stands used for nesting and compares recent patterns with earlier published data.

For each nest, the first recorded breeding year was determined, and the age of the dominant tree species at that time was reconstructed using Latvian Forest Register data. A total of 548 nests were included in the analysis after excluding records with incomplete register data.

The results show a modest tendency for nesting in younger forest stands. On average, nesting forests were 6–7 years younger than previously reported, with more pronounced decreases (~10 years) in stands dominated by spruce (*Picea abies*) and black alder (*Alnus glutinosa*). Clear-cuts and young stands (<20 years) contained only 3% of nests, confirming that these habitats are not typical. Birch-dominated stands accounted for the largest share of nests (45%), followed by spruce, pine, and aspen. Nests in grey alder (*Alnus incana*) stands were more frequent than in previous studies, likely reflecting the greater proportion of private forests represented in the dataset.

The analysis reveals a slight preference for younger forest stands and highlights that these results could be considered in micro-reserve planning.

Just a few among many: status of Greater Spotted Eagle and hybridisation with Lesser Spotted Eagle in Lithuania

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The presentation briefly introduces research on Spotted Eagles (*Clanga clanga*, *C. pomarina*) in Lithuania since 2000s. Specifically, the status of Greater Spotted Eagles at the end of 2000s presented and compared with the most recent data available for the country. A more detailed overview is presented of hybridisation cases in Nemunas river delta observed for two decades including distribution of mixed pairs, description of habitats occupied, migration routes of hybrids and known cases of return to the breeding ground during immature period.

Population dynamics and hybridisation of the Greater Spotted Eagle in Estonia

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The records of the Greater Spotted Eagle (*Clanga clanga*) in Estonia date back to the early 20th century. However, the first estimate of its population size was not made until the late 20th century, when 15–30 breeding territories were mapped, including pairs interbreeding with the Lesser Spotted Eagle. Since then, the Greater Spotted Eagle population has been continuously monitored using detailed field observations, nest cameras and genetic analysis.

During the first decade of the 21st century, the Estonian Greater Spotted Eagle population declined rapidly at an average rate of 14% per year. Subsequently, numbers stabilised at a critically low level, with only 5–10 territories remaining. The decline of pure-species pairs was steeper than that of mixed pairs, eventually leading to the absence of any known pure Greater Spotted Eagle pairs in 2023–2024. Encouragingly, extensive surveys conducted in recent years have provided evidence of the re-occupation of former territories. In 2025, a successfully breeding pure Greater Spotted Eagle pair was recorded, as well as four pairs consisting of a Greater Spotted Eagle and a hybrid, and three mixed pairs of Greater and Lesser Spotted Eagles. In addition to individuals in typical plumage, breeding and fledging of the light *fulvescens* form of the Greater Spotted Eagle were also documented.

Diverse foraging strategies of Eurasian Goshawks in the Białowieża Forest, north-eastern Poland

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The Eurasian Goshawk (*Accipiter gentilis*) is an iconic species used as a sentinel for valuable old-growth forests. However, as a flexible species, it also thrives in other landscape types, such as agricultural and urban environments. We used GPS telemetry to track the year-round movements of 13 male Goshawks breeding in the largest remaining primeval temperate lowland forest in Europe, the Białowieża Forest. We hypothesized that primeval conditions provide a sufficient food base for the hawks and, hence, the naturalness of the foraging grounds surrounding the nesting site is positively associated with habitat quality and negatively correlated with home range size. Alternatively, we expected that proximity to urban areas would increase the abundance and availability of optimal prey for hawks and thus leads to smaller home ranges. We detected a variety of movement patterns among individual hawks, ranging from year-round hunting mainly in the forest to exiting the woods to forage in villages and farmland for various periods. However, these behavioural responses were not always associated with nest site locations, and as a result, our hypotheses were not confirmed. Strikingly, several hawks breeding deep within the forest routinely covered long distances (up to 20 km) to hunt in a town, suggesting that the high numbers, accessibility, and predictability of optimal food in urban environments shape the foraging behaviour of raptors even in primeval forests. Potential mechanisms aligning the detected foraging patterns with optimal foraging theory, as well as conservation implications, will be discussed.