

A PRELIMINARY OVERVIEW OF RAPTOR MONITORING IN GEORGIA

Predhodni pregled monitoringa ptic parnic v Gruziji

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Monitoring of birds of prey started in Georgia in 1975 (FLINT & GALUSHIN 1981). The basic aim of the project was to obtain data on numbers and population trends needed for conservation. 40 raptor species have been recorded in the country; 34 of them are regular, while six are vagrants.

Breeding raptors

Breeding has been confirmed for 26 species; another 4 species are occasional breeders.

Numbers of breeding pairs are the following: Honey Buzzard *Pernis apivorus* (200–450), Black Kite *Milvus migrans* (500), White-tailed Eagle *Haliaeetus albicilla* (2–3), Lammergeier *Gypaetus barbatus* (20–22), Egyptian Vulture *Neophron percnopterus* (110), Griffon Vulture *Gyps fulvus* (40–45), Black Vulture *Aegypius monachus* (15), Short-toed Eagle *Circus gallicus* (25), Marsh Harrier *Circus aeruginosus* (110–130), Montagu’s Harrier *C. pygargus* (15–20), Goshawk *Accipiter gentilis* (240), Sparrowhawk *A. nisus* (750–800), Levant Sparrowhawk *A. brevipes* (45–60), Buzzard *Buteo buteo* (1,250–1,500), Long-legged Buzzard *B. rufinus* (55–60), Lesser Spotted Eagle *Aquila pomarina* (60–75), Imperial Eagle *A. heliaca* (35–40), Golden Eagle *A. chrysaetos* (up to 35), Bonelli’s Eagle *A. fasciata* (1–3), Booted Eagle *A. pennata* (70–100), Kestrel *Falco tinnunculus* (1,600–2,100), Red-footed Falcon *F. vespertinus* (occasional breeder), Hobby *F. subbuteo* (230–250), Lanner Falcon *F. biarmicus* (1–2), Saker Falcon *F. cherrug* (occasional breeder) and Peregrine Falcon *F. peregrinus* (40) (ABULADZE 2013).

During the study period (i.e. 1975–2012), monitoring revealed that nine species increased, seven remained stable and five declined, with unclear trends for the other five species. Two species which were regular breeders, no longer breed regularly: Osprey *Pandion haliaeetus* in the 1950s and Lesser Kestrel *F. naumanni* in the 1990s (ABULADZE 1996, 2008 & 2013).

Passage of raptors

Georgia is of special importance for migrating raptors owing to its location between Europe and Asia, located on their path from breeding grounds in Scandinavia, European Russia, the Urals and West Siberia to the Mediterranean, Middle Eastern and African wintering grounds. Monitoring of migrating raptors started in 1976. Counts were carried out in migration corridors in the 1976–1992, 1997–2002 and 2005–2006 periods in spring and autumn from constant stations during 52–67 days in autumn (704–782 hrs, 8–14 hrs/day) and 22–31 days in spring (219–335 hrs, 7–14 hrs/day) (ABULADZE *et al.* 2011A).

34 species are typical transit migrants. Among these, 28 species are regular migrants (Honey Buzzard, Black Kite, White-tailed Eagle, Egyptian Vulture, Short-toed Eagle, Marsh Harrier, Hen Harrier *C. cyaneus*, Pallid Harrier *C. macrourus*, Montagu’s Harrier, Goshawk, Sparrowhawk, Levant Sparrowhawk, Buzzard, Long-legged Buzzard, Rough-legged Buzzard *B. lagopus*, Lesser Spotted Eagle, Greater Spotted Eagle *A. clanga*, Imperial Eagle, Steppe Eagle *A. nipalensis*, Booted Eagle, Osprey, Lesser Kestrel, Kestrel, Red-footed Falcon, Merlin *F. columbarius*, Hobby, Saker Falcon and Peregrine Falcon), while six species – Crested Honey Buzzard *P. ptilorhynchus*, Red Kite *Milvus milvus*, Shikra *Accipiter badius*, Bonelli’s Eagle, Lanner Falcon and Eleonora’s Falcon *F. eleonora* are occasional passage visitors. Lammergeier and Golden Eagle are residents with local altitudinal movements; Griffon Vulture and Black Vulture (GAVASHELISHVILI *et al.* 2012) are nomadic species with wide movements outside the breeding seasons (VERHELST *et al.* 2011).

Data on species composition, numbers, diurnal activity, flight direction, flight altitude, correlation with weather conditions, stop-over sites, behaviour and threats were collected. Autumn passage is particularly intensive, with three well-distinguished waves. The most important flyways and bottlenecks are: the Eastern Black Sea Flyway with the “Batumi Bottleneck” (850,000 ind. of 34 species), “Mtkvari Valley Flyway” (250,000+ ind., 26 species), “Alazani Flyway” (200,000+ ind., 24 species) and “Javakheti Flyway” (200,000+ ind., 25 species) (Figure 1). The most important and well-known among them is the Eastern Black Sea Flyway with the Batumi Bottleneck. During the last decade, up to 2 million raptors of 34 species in autumn and up to 700,000 raptors of 32 species in spring have been estimated to migrate across Georgia. Especially numerous are Honey Buzzard (250,000–700,000 ind. in autumn), Buzzards *B. b. vulpinus*, *B. b. buteo* (200,000–600,000) and Black Kite (80,000–170,000) (VERHELST *et al.* 2011, ABULADZE *et al.* 2011A, ABULADZE 2013).

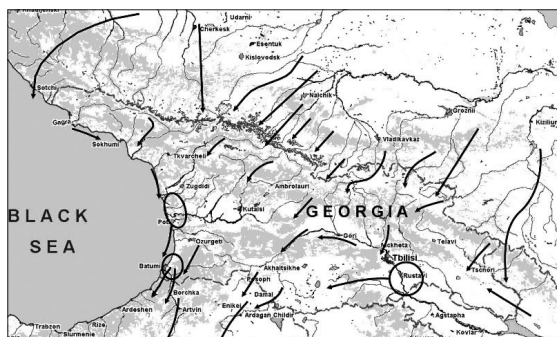


Figure 1: The most important flyways and bottlenecks during the raptors' autumn passage in Georgia. The arrows on the map indicate known flight directions across the country, while the encircled areas are stop-over sites along the most important flyways.

Slika 1: Najpomembnejše selitvene poti in ozka grla med jesensko selitvijo ujed v Gruziji. Puščice na zemljevidu prikazujejo znane smeri preletov čez državo, obkrožena območja pa so počivališča vzdolž najpomembnejših selitvenih poti.

Raptors in winter

Georgia is also important for the wintering raptors, which are represented by 23 species: 18 occur regularly, three irregularly and two occasionally. Counts of wintering raptors were carried out in the 1977–1991, 1997–1999 periods and in 2004 and 2006. Coverage of wintering areas was 45% in 1977–1982, 75–85% in 1983–1991, 40% in 1997–1999, and about 30% in 2004 and 2006. Total numbers of wintering raptors greatly fluctuated, i.e. from 4,400 individuals in hard, cold, snowy winters to 14,700 individuals in mild, warm, snowless winters. Numbers were directly correlated with the meteorological situation in surrounding regions, especially in the foothills and steppes of the North Caucasus. Raptors are distributed in wintering habitats unevenly and prefer areas with abundant food resources and favourable hunting conditions. Preferred wintering habitats are located in areas with warm and snowless winters. Kolkheti Lowland in the western part of the country should be considered as the most important wintering area, holding up to 70% of all wintering raptors. The narrow strip of the Black Sea coastlands holds up to 10–15%, and other parts of the country 15–30% of all wintering raptors. Vertical limits of wintering habitats are 0–1,000 m a.s.l., usually up to 600 m a.s.l. Solitary birds have been recorded higher up in warm winters – up to 1,700 m a.s.l. At times, wintering conditions are more favourable in anthropogenic landscapes than in natural habitats (due to more stable food resources and less severe weather impacts). Raptors are

usually concentrated in mosaic biotopes, including small forests, which are used as shelters against bad weather and as night roosts. Black Kite is by far the most numerous wintering raptor (3,000–12,000 ind.) (ABULADZE 2013, ABULADZE *et al.* 2002 & 2011B).

Main players

The main actors in monitoring for raptors in Georgia are:

- (1) Governmental organisations – the Ministry of Environment Protection of Georgia carries out the bio-monitoring programme with funding from SVS/BirdLife Switzerland; raptors are part of this programme. 12 specialists from different regions participate in this project.
- (2) Research organisations – there are only two centres in Georgia, researchers of which carry out monitoring of raptor populations. The Institute of Zoology of the Ilia State University (formerly of the Academy of Sciences of Georgia) has carried out the long-term monitoring on breeding, migratory and wintering populations since the 1970s. In recent years, the Institute of Ecology has been monitoring some species using modern methods, like tracking with satellite-received radio-transmitters (GAVASHELISHVILI *et al.* 2006 & 2012).
- (3) Solitary researchers monitor raptor populations at the local level in some regions (EDISHERASHVILI 1999).
- (4) Several NGOs (Bird Conservation Union of Georgia, “Bude”, Georgian Centre for the Conservation of Wildlife, PSOVI) also carry out small-scale monitoring activities at the regional level or on certain species of raptors; they also carry out applied research on the impact of technical constructions on raptor populations.

Special attention must be paid to the activities by members of the international project *Batumi Raptor Count* (<http://www.batumiraptorcount.org>). Since 2008, each autumn participants of this project have monitored migrating raptors at the Black Sea coast in SW Georgia, in one of the most important bottlenecks in the Western Palearctic (VERHELST *et al.* 2011).

Contacts have been established with all neighbouring countries of the region (but there are currently no contacts with Russia due to political reasons). Until 1992, projects were carried out within the framework of former USSR programmes (FLINT & GALUSHIN 1981). Since then, contacts have been established with researchers from Azerbaijan, Armenia and Turkey, but at a fairly small scale and

concentrating on some issues (specific raptor species or trans-boundary projects). Besides, small scale projects with some European countries are mostly carried out through individual contacts or private initiatives. There are representatives of international organisations in Georgia, such as WWF, IUCN and BirdLife International, which carry out the various programmes of these organisations, with Georgia participating in them.

In Georgia, the main users of data collected during raptor monitoring are governmental organizations, ministries and departments, research institutes, universities, mass-media, national parks, nature reserves, and some international organizations.

National coverage

Comprehensive monitoring of raptors in Georgia was carried out during the 1970s and 1980s, but in the 1990s there were no such possibilities due to financial, political and social challenges to monitoring the whole territory of Georgia. However, in recent years the extent of monitoring has grown. Wintering and migratory species are monitored well, but breeding species are not covered comprehensively. At the present time, there is unfortunately no national coordination or network for monitoring raptors.

Threats

The main threats to raptors in Georgia, causing declines in some raptor species, are illegal shooting, falconers' activities, and the transformation and destruction of breeding and feeding habitats. Economic activities such as the construction of railways, roads, oil and gas pipelines, ports, airports, alpine resorts and creation of reservoirs endanger the raptors' habitats. The impact of newly constructed power transmission lines may also be negative. The main threat to migratory raptors is illegal shooting. The practice of trapping hawks and large falcons for falconry purposes also presents one of the major raptor conservation problems in Georgia (MAANEN *et al.* 2001, ABULADZE *et al.* 2011C, JANSEN 2011).

Weaknesses and challenges

At present, the main problems relate to monitoring of breeding populations, since there is no governmental funding, a lack of monitoring specialists and no national monitoring scheme adapted to modern conditions. Another gap is the lack of owl monitoring. For the regions Abkhazia and South Ossetia, we lack any data for the last 20 years due to the political instability of the areas. However, taking into account the diversity of raptors, the rich species composition,

the especially high numbers of migrants, and regular presence of several otherwise rare or accidental species in Europe there is plenty to interest researchers and motivate more monitoring.

Among the specific areas of weakness, or challenges, for which Georgia might benefit from international sharing of good/best practice, we should mention the funding schemes, training opportunities, new methods and technologies adapted for small countries like Georgia. The lack of professional researchers involved in monitoring of diurnal and nocturnal raptor populations, training of young researchers, engagement in international programmes together with funding, introduction of inexpensive methods of monitoring of raptors should be considered as the main capacity-building needs to strengthen monitoring for raptors in Georgia.

References

- ABULADZE, A. (1996): Lesser Spotted Eagle *Aquila pomarina* in Georgia. pp. 349–355 In: MEYBURG, B.U. & CHANCELLOR, R.D. (eds.): Eagle studies. – World Working Group on Birds of Prey, Berlin, London & Paris.
- ABULADZE, A. (2008): [Changes in the species composition and numbers of the birds of prey in Georgia in 1975–2007.] pp. 162–166 In: GALUSHIN, V.M., MELNIKOV, V.N., CHUDNENKO, D.E. & SHARIKOV, A.V. (eds.): Research and Conservation of the Raptors in Northern Eurasia. Materials of the 5th Conference on Raptors of Northern Eurasia, 4–7 February 2008, Ivanovo, Bulgaria. – Ivanovo State University. (in Russian)
- ABULADZE, A. (2013): Birds of Prey of Georgia. Materials towards a Fauna of Georgia, Issue VI. – Institute of Zoology, Ilia State University & Publishing house “Lasha Khvichia”, Tbilisi.
- ABULADZE, A., ELIGULASHVILI, B. & SHERGALIN, J. (2002): Wintering of raptors in Georgia. pp. 141 In: YOSEF, R., MILLER, M.L. & PEPLER, D. (eds.): Raptors in the New Millennium. Proceedings of the World Conference on Birds of Prey & Owls “RAPTORS 2000”, 2–8 April 2000, Eilat, Israel. – Israel International Birding & Research Center in Eilat, Israel.
- ABULADZE, A., KANDAUROV, A. & ELIGULASHVILI, B. (2011A): Seasonal migrations of Birds of Prey across Georgia: results of the long-term studies. pp. 3–4 In: Materials of the International Conference “The Birds of Prey and Owls of Caucasus”, 26–29 October 2011, Tbilisi, Abastumani, Georgia.
- ABULADZE, A., KANDAUROV, A., EDISHERASHVILI, G. & ELIGULASHVILI, B. (2011B): Wintering of raptors in Georgia: results of long-term monitoring. pp. 4–5 In: Materials of the International Conference “The Birds of Prey and Owls of Caucasus”, 26–29 October 2011, Tbilisi, Abastumani, Georgia.
- ABULADZE, A., KANDAUROV, A., BUKHNIKASHVILI, A., NATRADZE, I., KOKHIA, M., BEKOSHVILI, D., GORGADZE,

- O., EDISHERASHVILI, G., GODERIDZE, A., GERTSVOLF, A., ELIGULASHVILI, B., KASHTA, YE., SHEKILADZE, SH., MTATSMINDELI, A., ROSTIASHVILI, G., BERUCHASHVILI, G. & ABULADZE, G. (2011C): The analysis of recorded causes of death of adult birds of prey and owls in Georgia in 1973–2011. pp. 5–7 In: Materials of the International Conference “The Birds of Prey and Owls of Caucasus“, 26–29 October 2011, Tbilisi, Abastumani, Georgia.
- EDISHERASHVILI, G. (1999): [The modern status of the raptors of Shida Qarthli Region.] pp. 242–246 In: Proceedings of Tskhinvali State Pedagogical Institute. (in Russian)
- FLINT, V.E. & GALUSHIN, V.M. (1981): Strategy of raptor conservation in the USSR. – Journal of Raptor Research 15 (1): 1–3.
- GAVASHELISHVILI, A., MCGRADY, M.J., & JAVAKHISHVILI, Z. (2006): Planning the conservation of the breeding population of cinereous vultures (*Aegypius monachus*) in the Republic of Georgia. – Oryx 40 (1): 76–83.
- GAVASHELISHVILI, A., MCGRADY, M., GHASABIAN, M. & BILDSTEIN, K.L. (2012): Movements and habitat use by immature Cinereous Vultures (*Aegypius monachus*) from the Caucasus. – Bird Study 59 (4): 442–462.
- JANSEN, J. (2011): The Protocol for long-term raptor migration monitoring along Eastern Black Sea flyway in Batumi, Georgia. pp. 20–21 In: Materials of the International Conference “The Birds of Prey and Owls of Caucasus“, 26–29 October 2011, Tbilisi, Abastumani, Georgia.
- MAANEN, VAN E., GORADZE, I., GAVASHELISHVILI, A. & GORADZE, R. (2001): Trapping and hunting of migratory raptors in western Georgia. – Bird Conservation International 11 (2): 77–92.
- VERHELST, B., JANSEN, J. & VANSTEELANT, W. (2011): South West Georgia: an important bottleneck for raptor migration during autumn. – Ardea 99 (2): 137–146.

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