

The Bearded Vulture *Gypaetus barbatus* in Caucasia

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Until recently the Bearded Vulture was one of the least investigated species of the Caucasian avifauna. There were practically no data about its distribution, numbers, ecology, etc. Only during the current decade have some communications on this raptor in different parts of Caucasia been published. The present status and conditions of the species in Caucasian Nature Reserve, Taberda Nature Reserve, North-Ossetian Nature Reserve and Georgia are now well known, mostly thanks to studies by O.A. Vitovich, 1983, 1984, 1985; Yu. Ye. Komarov & P.I. Veinberg, 1981; Yu. Ye Komarov & A.D. Lipkovich, 1983 and A. Abuladze, 1981, 1986, 1989.

DATA

The present report is a short account of the main results of investigations on the Bearded Vulture in the Caucasian region since 1973. It contains material collected by the author in North Caucasia and Transcaucasia:

-Russian part of North Caucasia, 1977-1990 (Krasnodar and Stavropol Territories and Autonomous Republics of Kabarda-Balkarian, North Ossetian, Ingushetian, Chechen, Dagestanian);

- Georgian part of North Caucasia, 1975-1991 (Kazbegi district, upper reaches of Terek River, Dusheti district, upper reaches of Argun River, Akhmeta district, massifs of Mt. Diklos-Mta and Mt. Tebulos-Mta.);

-Transcaucasian part of Great Caucasia (territories of Georgia, 1973-1994 and Azerbaijan, 1975-1979, 1985, 1987-1990);

-Caucasia Minor (territories of Georgia, 1975-1992, Azerbaijan, 1977, 1981-1983, 1989 and Armenia, 1974, 1978-1979, 1981, 1985-1989).

DISTRIBUTION

In Caucasia the Bearded Vulture at present occurs in upper zones of mountainous forests, prealpine and alpine meadow belts along the whole Caucasian Isthmus and in the Black and Caspian Sea catchment areas. The vertical limits

of the species' distribution, according to my observations, are between 600-4750m above sea level. All known nests are located between 815 and 2200m a.s.l.

The breeding range in Caucasia covers the following areas:

in the Russian part of Great Caucasia - Skalistyi Range, Peredovoi Range, northern macro-slopes and spurs of the Main Caucasian Range;

in the Transcaucasian part of Great Caucasia, the southern macro-slopes and spurs of the Main Caucasian Range in Georgia and Azerbaijan;

in Caucasia Minor in West Georgia (Adjara-Imereti Range), Azerbaijanian part of Caucasia Minor and Armenia.

The north-western border of the species' breeding area in Caucasia runs along the Phisht-Oshten mountain-mass and the Lagonaki Plateau adjoining it. Mt. Bazardyzyu is the north-eastern limit. Single birds have been recorded east from this point, but I believe these to be non-breeding nomads.

HABITATS

Birds of the Caucasian population do not connect with certain altitudinal belts. In searching for food, they control extensive territories - from foothills up to the snowline. The preferred breeding habitats are rocky masses in the mountain-forest zone; the feeding habitats are prealpine and alpine meadows, large glades in forests, river valleys, in some places the environs of settlements.

MOVEMENTS

In Caucasia the Bearded Vulture is a typical resident species, but nomads often wander along Caucasian mountain systems. Birds on the Main Caucasian Range often cross this in search of food; similarly specimens from Transcaucasian populations have appeared in North Caucasia. Besides this, in winter they descend to lower high-altitude belts.

NUMBERS

Many works in the ornithological literature of the 19th and early 20th centuries affirm that the Bearded Vulture was common at that time throughout the mountains of the region. The total number was unknown, but I estimate that in all Caucasia between the 1880s and 1930s it could have been 200-250 breeding pairs.

In Georgia during the last two decades the population has been estimated at 22-25 breeding pairs: 19-21 in Great Caucasia (southern slopes of the Main Caucasian Range and its spurs) and 3-4 pairs in Caucasia Minor (Adjara-Imereti Range, Dzhavakheit Upland, probably one pair on the Trialeti Range).

The total numbers for Azerbaijan are unknown. According to my data, collected 1977-1986 in different parts of country, there are about 30 pairs supposed to be breeding: 20-25 in Great Caucasus and about 5 pairs in Caucasus Minor.

At present 12-15 pairs breed in Armenia, mostly in eastern and southern parts of the country.

Thus, summarising the above-mentioned, I can propose, that by the late 1980s-early 1990s, ca. 110-115 pairs nested in the territory of Caucasus, just within the Russian part of North Caucasus and in the Transcaucasian countries of Georgia, Armenia and Azerbaijan. This exceeds the earlier estimate of "several tens of pairs" (Galushin & Pererva 1982), obviously due to better coverage of the territory. The number of nesting Bearded Vultures in Great Caucasus is estimated at 90-95 pairs out of the total of 110-115.

There were no essential changes in numbers during the study period. The population has been relatively stable during the last two decades, but its decrease is possibly due to the involvement of Caucasian countries in armed conflicts: some districts of NW Georgia (Abkhazia), North Ossetia, Ingushetia, Karabakh and southern districts of Azerbaijan (along the borders with Armenia). Unfortunately, I have no data from these areas during the last two years.

BREEDING BIOLOGY

Nests were recorded at altitudes ranging from 815 to 2200m a.s.l.: 1140-2200m a.s.l. in Great Caucasus and 815-1770m a.s.l. in Caucasus Minor. The greatest number, about 76% of all known nests, were located between 1500 and 1900m a.s.l. All nests were located on rocks in the mountain forest belt, or a little higher at the upper border of the forest. Usually nests have an eastern or south-eastern exposure and are in niches under rocky overhangs.

Egg laying

Eggs are laid mostly in the first half to middle of January.

Hatching

Hatching was recorded for six nests in early to mid-March

Fledging

Fledging was observed mainly in the second half of June - beginning of July. The earliest fledging of young was registered on June 17, 1977; the latest on July 11, 1981. The young birds have often been observed near the nest site together with adults.

Nesting success and productivity were examined mostly for Great Caucasian birds - on the territory of Dagestan (Russia), Western Azerbaijan

Table 1. Indices of effectiveness in Bearded Vulture breeding in Caucasia, 1983-1991.

	1983	1984	1985	1986	1987	1988	1989	1990	1991
Checked territories	10	11	10	9	12	11	9	7	4
Occupied territories (with pairs)	8	10	10	8	10	10	7	7	4
Territories with eggs	8	9	10	8	9	10	7	6	4
No. of successful nestings	7	8	10	6	8	8	7	5	3
No. of unsuccessful nestings	1	1	0	2	1	2	0	1	1
Percentage of successful nestings	8.75	88.9	90.0	75.0	88.9	80.0	100.0	83.3	75.0
No. of young capable of flying	5	7	8	5	6	6	6	4	3
No. of young capable of flying per successful nesting	0.71	0.88	0.89	0.83	0.75	0.75	0.86	0.80	1.0
No. of young capable of flying per occupied territory	0.63	0.7	0.8	0.63	0.6	0.6	0.86	0.57	0.75
No. of young capable of flying per established nesting	0.63	0.78	0.8	0.63	0.67	0.6	0.86	0.67	0.7
Territories with no activity	2	1	0	0	1	0	0	0	0
No data	0	0	0	1	1	1	2	0	0

and Georgia. A total of 94 nesting attempts was recorded 1975-1993 for 38 pairs. The percentage of successful nestings was about 82%, the average of young fledged being 0.81, the number of fledged young per occupied territory 0.66 and of young capable of flying per established nesting 0.70. The main characteristics of breeding success in Central Caucasia during the period 1983-1991 are shown in Table 1. A lot of pairs are unsuccessful, probably due to disturbance from human activities.

FOOD

Feeding on medium to large carcasses of wild and domestic animals, the Bearded Vulture in Caucasia very rarely takes live prey (Abduladze, 1989; Komarov & Veinberg, 1981; Veinberg, Komarov & Lipkovich, 1983).

LIMITING FACTORS

61 cases of mortality were recorded during the study period. The main cause of loss, about 54%, was in baited traps for predatory mammals. 12 cases (20%) of loss from poisoned baits were also recorded. Unfortunately, despite legal protection, 11 cases (18%) of shooting were recorded in Caucasia since 1975. Cases of death recorded in Caucasia by seasons 1973-1993, (n=43) were the following; ca. 35% in winter, 39% in the breeding season and 26% in the post-breeding season. In 1960-1980s one of the main threats was recreational pressure, disturbance caused by tourists and alpinists. At that time Caucasia was a very popular tourist area, but during recent years, due to various cataclysms, this factor has been practically absent.

CONSERVATION

All birds of prey have been under protection since the beginning of the 1970s by the laws on nature conservation and hunting, valid throughout the former USSR as in separate soviet republics (Russian Federation, Armenia, Azerbaijan, Georgia). Fines were established for the killing of protected species. Since 1978 the Bearded Vulture was included in the first edition of the Red Data Book of the USSR as endangered. In 1984 it was included in the second edition in the Red Data Books of the former USSR and some Republics, now independent countries - Russia (1983), Georgia (1982), Armenia (1985). In Azerbaijan it is included in the list of endangered species. The birds, their nests and habitats are protected in some Russian, Armenian, Azerbaijanian and Georgian Nature and Game Reserves:

In Russia - Caucasian (263.300 ha), Teberda (85.000 ha), Kabarda-Balkarian (74.100 ha) and North Ossetian (30.000 ha) Nature Reserves and Guton Game Reserve (34.600 ha);

In Armenia - Khosrov (29.200 ha), Dilijan (28.000 ha) and Shikakhokh (10.00 ha) Nature Reserves;

in Azerbaijan - Zakatala (23.800 ha), Ilisu (9.300 ha) and Ismaily (5.800 ha) Nature Reserves;

in Georgia - Ritza (16.300 ha), Pskhu-Gumista (40.800 ha), Borjomi (18.000 ha), Kazbegi (8.700 ha) Akhmeta (16.300 ha) and Lagodekhi (17.800 ha) Nature Reserves and Kabali Game Reserve (6.500 ha).

In my opinion, the main measures for effective protection of the Caucasian population of the Bearded Vulture are:

- registration of all known nest sites and granting them special protection;
- strict control of the use of traps for mammals in the species' breeding and feeding habitats;
- a ban on poisoned baits throughout all Caucasian countries;
- strict control of illegal shooting;
- organisation of some feeding stations, mostly in Caucasia Minor;
- intensive use of the mass media to enlist public interest and support;
- co-operation and joint efforts between all Caucasian specialists in order to co-ordinate both the study and conservation of the species in Caucasia.

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