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## BONELLI EAGLE (*Hieraaetus fasciatus*V.) IN YUGOSLAVIA

### PRVI NALAZ PLANINSKOG ORLA (*Hieraaetus fasciatus* V.) NA GNEŽDENJU U JUGOSLAVIJI

*Almost a hundred years has passed since the first data on the breeding a Bonelli Eagle in Yugoslavia. Dr. Reiser obtained an egg from an area near Stolac in 1888 similar in color and shape to that of the egg of the Bonelli Eagle. However, this egg was lighter then the other eggs known until that time. It was believed to have been collected in April. The fact made this discovery unvaluable (Reiser, O. 1939). Bonelli Eagle status has still not yet been defined in Yugoslavia (Matveyev, S., Vasić, V. 1973.)*

#### 1. DISTRIBUTION

An adult sample of the Bonelli Eagle was observed in the area of Stolac, on August 4th 1983. In the same locality on May 5th 1984 two adult Bonelli Eagle protected their territory and attacked a Golden Eagle (*Aquila chrysaetos*) whose nest was 4 km away from the protected territory. That year on May 9th, on a rainy day an adult Bonelli Eagle was observed not far from the protected territory. It carries a Rock Partridge (*Alectoris graeca*) in its talons to the nest with juvenile waiting for it (June 15th 1985).

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The nest was built on the terrace of a 100 m cliff. The limestone rock had its west exposition and the nest was at an altitude of 850 m.

A young Bonelli Eagle was observed in the same locality on August 1st, 1985 and again at the foot of the mountain Crvanj on August 8th, 1985. All records of the Bonelli Eagle except the last one were made within an average territory distance for this species of 120 km<sup>2</sup> (Thiollay, J. M. 1968). Thus considered is one pair of Bonelli Eagle.

Besides the locality already mentioned, the Bonelli Eagle was also recorded during the breeding period in the coastal area and in Vardar, Macedonia. Along the North coast-line the Bonelli Eagle was discovered on the island of Krk on April 20th, 1956 (König, C. 1961), and on May 7th, 1981 (Sušić et al. 1983) in Velika Paklenica at the beginning of May 1981 and in Mala Paklenica on June 25th, 1982 (Sušić et al. 1983).

Along the southern coastline the Bonelli Eagle was recorded on the Rumija mountain and Skadar lake (Kattinger, E. 1960, Thorpe et al. 1936, Vasić, V. 1980). The most important records are: Šasko lake, April 30th 1975 (Vasić, V. orally), Suromore gorges Brca May 1st 1977 and May 4th 1981 (Scott, R. 1978, 1981). A recording was made during the breeding period in Macedonia, at Dorjan lake on May 12th, 1954 (Matvejev, S., Vasić, V., 1973) as well as of a sample not in the breeding period (Vasić, V. orally 1984, Ganso, M. 1962).

## 2. DISCUSSION

The Bonelli Eagle is attached to its territory and does not exceed distances of over 50 km from its nest. During the breeding period these distances are even less than 20–25 km (Champ, S., Simmon, K. E. L. 1979). Thus we may consider as possible breeding areas localities where an adult Bonelli Eagle was recorded during the period of breeding. Adult birds do not pass mountain barriers with cold and wet climate while young birds fly far to the North (Cramp, S., Simmon, K. E. L., 1979). Collections of the Bonelli Eagle were made in the Panonia Valley in Vojvodina: Titel, Bečej, Melenci (Antal et al 1971) and a recording of one sample in East Serbia (Basara) (Hill, D. 1987) proves this.

This species of eagle belongs to typical Mediterranean species with an early breeding period which includes laying of eggs in February and flying in the middle of June (Glutz von Blotzheim et al 1971). In this way the dry and hot summers typical for Mediterranean is avoided. The typical habitat of the Bonelli Eagle are provinces of Mediterranean coastal forests and maquis and Mediterranean semi-deserts (Champ, S., Simmon, K. E. L. 1979).

This type of eagle can be found in Europe mostly on plains influenced by Mediterranean climate and rarely in mountains over 1000 m of altitude (Thiollay, J. M. 1968).

The northern border in Europe for this species of eagle is 44 (Cramp, S., Simmon, K. E. L., 1979) on North latitude with the mean July isotherm of 25 C (Colin, H, 1982).

In Yugoslavia the mean isotherm of 25 C during the warmest month of the year can be found only in the Neretva Valley and the Vardar Valley while an isotherm of 26 C can be found in Zeta Valley (Dedić, I et al 1986). Isotherms on the map of the recording during the breeding period are obviously identical except for the records made in the Kvarner archipelago.

### 3. CONCLUSIONS

The Adriatic coast of Yugoslavia has a narrow region with Mediterranean climate insufficient to provide a hunting territory of 120 km<sup>2</sup> which is necessary for this species during the nesting period. Thus this species can be found in river valleys which are warmer than the coast and include a wide region influenced by Mediterranean climate.

The records made from the Kvarner archipelago have probably been due to a jagged coast line and a great number of Conys (*Oryctolagus cuniculus*) living there who play an important role in the feeding of the Bonelli Eagle.

Because of its specific choice of habitat, extreme territoriality and low population density, the Bonelli Eagle is a rare bird of prey in Yugoslavia. Thus we can't expect to find more than 8 pairs of the Bonelli Eagle breeding in Yugoslavia.

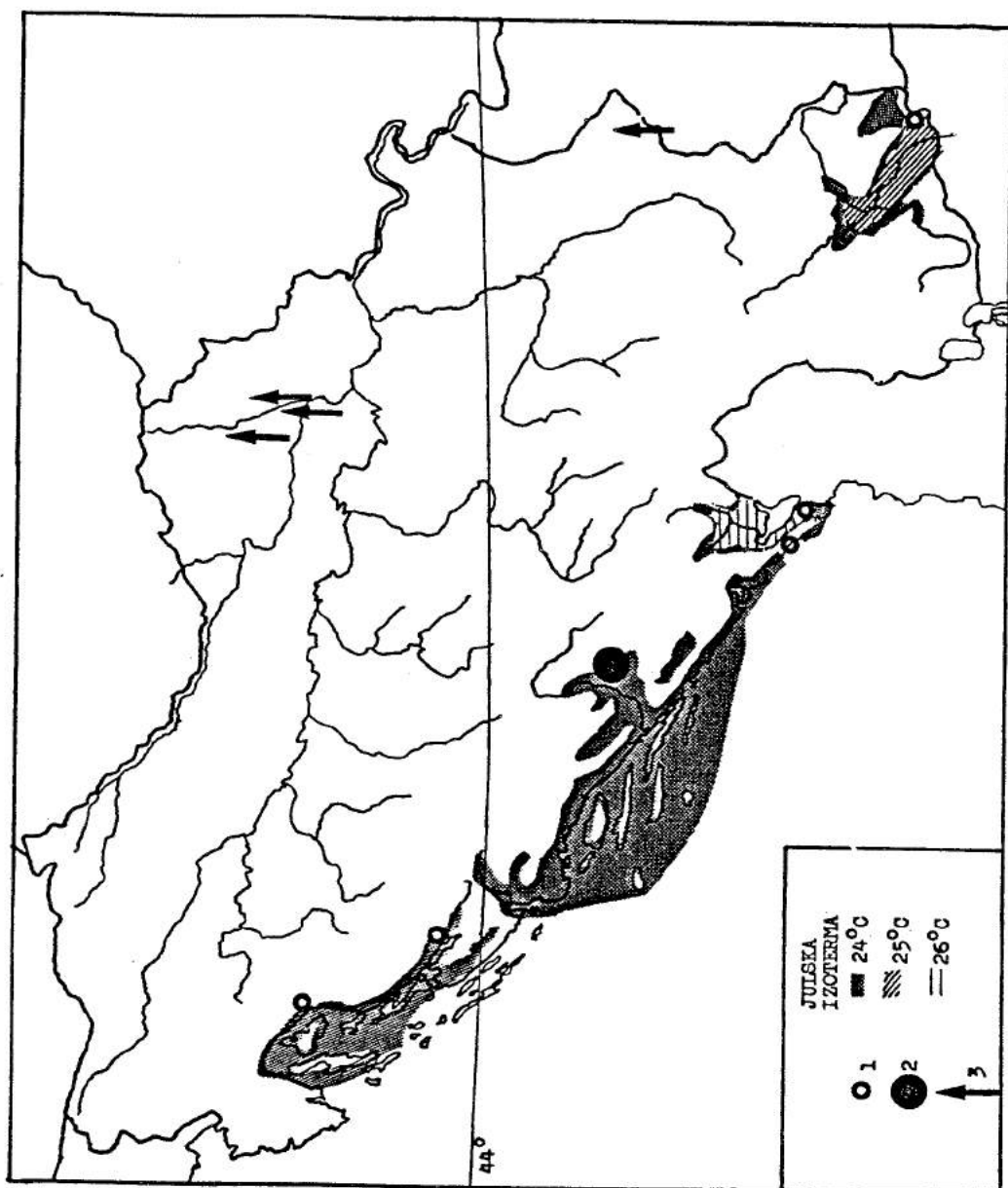


Fig. 1.

1. Record of adult sample during the period of breeding
2. Recorded breeding
3. Record of juvenile sample on no breeding territory

## 5. REFERENCES

- Antal, L. et al. (1971): Namenferzeichnis der Vögel der Autonomen Provinz Vojvodina. Larus 23: 73–127
- Colin, H. (1982): An Atlas of the Birds of the Western Palearctic. Collins London 1982.
- Cramp, S., Simmons, K. E. L. (1979): The Birds of the Western Palearctic. Vol. II Oxford–London–New York 1979.
- Delijanić, I., Ranković, S., Radaušević, D., Sokolović–Ilić, G. (1985): Atlas klime Socijalističke Federativne Republike Jugoslavije, Period od 1931–1960 godine. savezni hidrometeorološki zavod 1985.
- Ganso, M. (1962): Beobachtungen aus Jugoslawien und Nordgriechenland. Egretta 5:62.
- Glutz von Blotzheim, N. K. M., Bauer, E., Bazzel (1971): Handbuch der Vögel Mitteleuropas. Band 4. Falconiformes. Frankfurt am Maina
- Hill, D. (1987): Some contributions to the avifauna of Souther parts of Serbia. Glasnik Prirodjačkog muzeja Beograd. B 40: 191–206
- Kattinger, E. (1960): Beitrage zur Vogelkunde von Albanien (Shqipnia) und einiger jugoslawischer Nachbargebiete. Larus 13.13: 123–216
- König, C. (1961): Ornithologische Beobachtungen in Istrien und Dalmatien im Frühjahr 1956. Anzeiger der Orn. Gesell in Bayern. Band VI. Nr 2: 166–175.
- Matvejev, S., Vasić, V. (1973): Catalogus faunae Jugoslaviae IV/3 Aves. Cons. Acad.–Sci., Ljubljana
- Reiser, O. (1939): Materialien zu einer Ornithologia I. Bosnien und Herzegovina. Wien.
- Sage, B. L. (1964): Notes on the Birds of the lower Neretva Valley. Yugoslavia. Ardea 52: 202–218.
- Sušić, G. et al (1983): Bonelli's Eagle (*Hieraaëtus fasciatus* Vieillot, 1822) on the island of Krk. Larus 33–35: 200–203.
- Scott, R. (1978): Report. Bird list for ornitholidays groups to Yugoslavia May 1977 and 1978 Petrovac. manuscript.
- Scott, R. (1981): Report. Bird list for ornitholiday groups to Yugoslavia April 26th. May 9th 1981. manuscript.
- Thiollay, J. M. (1968): Essai sur les Rapaces du midi de la France. Distribution–ecologie tentative de denombrement. Aigle de bonelli. *Hieraaëtus fasciatus fasciatus* (Vieillot). Alauda 36: 52–62.
- Thorpe, W. et al. (1936): Notes on the Birds of lakes Ochrid, Malik and Prespa and adjacent part of Yugoslavia. Albania and Greece. Ibis 1936: 557–580.
- Vasić, V. (1980): The list of birds of Skadar Lake (Montenegro, Yugoslavia). Larus 31–32: 185–208.

## 6. SAŽETAK

*Planinski orao gnezdí se u okolini Stoca na krečnjačkoj litici nadmorske visine 850 metara. Nalazi odraslih ptica u periodu gnežđenja u najtoplijim oblastima Jugoslavije sa mediteranskim uticajem ukazuju na mogućnost gnežđenja ove vrste i na tim područjima. Dosadašnja istraživanja potvrđuju da planinski orao ima disjunktan areal i da je on prvenstveno vezan za rečne doline sa mediteranskim uticajem. Uzana zona pod mediteranskim uticajem uz obalu smanjuje mogućnost veće brojnosti ove vrste.*

*Za ovu vrstu karakteristično je da mlade ptice napuštaju oblast gnežđenja i odlaze daleko na sever, što potvrđuju nalazi ove vrste u Srbiji. Domaci naziv za ovu mediteransku vrstu koja se sreće u dolinama neprikladan je. Planinski orao je retka gnezdarica Jugoslavije.*