

Contributions to the distribution of Amphibia, Caudata in Neamț County, Romania

Iulian GHERGHEL¹, Radu-Dorin ILE²

¹Forest Technical College, Piatra Neamt,
67 Stefan cel Mare Street, Piatra Neamt, Romania, iuliangherghel@gmail.com

²University of Oradea, Department of Biology, Romania

The first data synthesis of the caudate spreading in Neamț County was done by Fuhn in 1960. Subsequently, some other scientists had been presenting data about the caudate in this area (Ionescu et al 1968, Șova 1970, 1972, Geormăneanu 1975, Borcea & Vancea 1981, Ion & Valenciu 1986, Ghiurcă et al. 2005). Nevertheless, the precise distribution of the caudate in Neamț County is far from being known.

Our study was done between May and October of 2003 - 2005. We have investigated the newts' breeding habitats, mainly consisting of ponds with luxuriant vegetation and dens.

The lowest altitude of the studied area (Fig. 1) was in the proximity of the village Români (250 m a.s.l.), located in the centre of the Neamț County. The highest altitude of the studied area was in the village Potoci (570 m), on the left shore of the Izvorul Muntelui reservoir.

Salamandra salamandra – in the studied area this species doesn't appear to be endangered.

Triturus vulgaris was found only in half of the localities but it is not an endangered species here.

Triturus cristatus is represented by a small number of specimens, due to the

forest exploitations which destroyed the breeding puddles by log dragging, forest roads, temporary dry-ups or deviations of water streams and by earth flows as a result of clearing activities. We have not discovered any specimens belonging to the *Triturus dobrogicus* species, the closest known habitat with this species being several hundred kilometres away in the South of Moldavia (Arntzen et al 1997, Iftimie 2005).

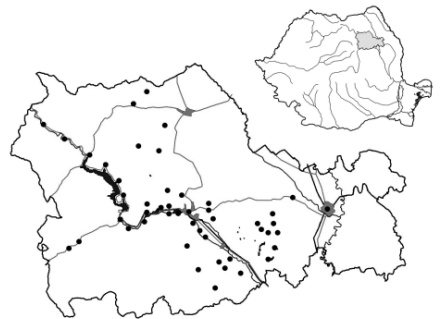


Figure 1. The area that was subjected to our study.

We consider the *Triturus alpestris* species just as vulnerable in the studied area due to the forest exploitations that are destroying their breeding habitats and also because of the fact that it is abusively collected by tourists and local people for their impressive look.

Table no.1. The distribution of Caudata in Neamț

Locality	Ss	Tv	Tc	Ta	Tm
Agapia	-	Gh*	Gh*	Gh*	F*
Agarcia	Gh*	Gh*	Gh*	Gh*	Gh*
Bicaz Chei	*	*	*	*	*
Bicaz	*	*	*	*	F*
Bicazul Ardelean	-	-	-	*	*
Bistrita	Gh*	Gh*	Gh*	Gh*	Gh*
Borlești	*	*	*	*	*
Brasauti	Gh*	Gh*	Gh*	-	-
Buhalnita	Ic*	Ic*	Ic*	*	*
Cuejdiu	*	*	*	*	*
Cut	Gh*	Gh*	Gh*	-	-
Doamna	Gh*	Gh*	Gh*	Gh*	Gh*
Dulcești	-	*	Gh*	-	-
Durau	-	-	S2	S0	-
Farcasa	*	-	-	*	Gh*
Făurei	*	*	*	-	-
Gîrcina	Gh*	Gh*	Gh*	-	-
Goșmani	-	*	*	-	-
Gura Văii	Gh*	Gh*	Gh*	-	-
Hangu	*	Ic*	*	*	*
Hârjești	-	*	*	-	-
Hoisești	-	*	*	-	-
Izvoare	-	Gh*	Gh*	-	-
Leghin	Gh*	Gh*	Gh*	Gh*	Gh*
Magazia	*	Gh*	Gh*	Gh*	Gh*
Mastăcan	-	*	*	-	-
Mărgineni	-	*	*	-	-
Micșunești	-	*	*	-	-
Mitocu Balan	*	Gh*	Gh*	Gh*	Gh*
Nechit	*	*	*	*	*
Nemțisor	-	*	*	Gh*	Gh*
Oațu	Ic*	*	*	*	*
Pangaracior	Ic*	*	*	-	*
Pângărați	Ic	*	*	Ic	Ic*
Piatra neamti	Gh*	Ic*	F*	Gh*	*
Poiana Teiului	Ic	*	*	Ic*	Ic*
Poieni	*	*	*	*	*
Potoci	Ic	-	*	*	*
Prăjești	-	*	*	-	-
Rediu	-	*	*	-	-
Roman	-	Gh*	S2*	-	S2
Români	-	*	*	-	-
Ruseni	-	*	*	-	-
Sabasa	*	*	*	-	Ic*
Tarcău	F	*	*	S0*	S2*
Tatomirești	-	*	*	-	-
Tazlău	F*	S2*	F*	F*	F*
Turturești	-	Gh*	Gh*	-	-
Văleni	Gh*	Gh*	Gh*	-	-
Văratec	*	Gh*	Gh*	Gh*	Gh*
Viisoara	Gh*	Gh*	Gh*	-	-

Legend: *-this study; Gh-Ghiurcă et al.2005; F-Fuhn 1960; S0-Șova 1970; S2-Șova 1972; BV-Borcea & Vancea 1981; Ic-Ionescu et al. 1968; IV-Ion & Valenciu 1986; G-Gormăneanu 1975;

Triturus montadoni – it is not endangered in the studied area but as a result of the factors mentioned for the previous species, their number drops worryingly each year.

The main particularity of the ponds from the area of Oantu-Doamna (which will be a natural reservation in the future – as proposed by I. Gherghel) is that the four species belonging to the *Triturus* genus share the same breeding sites. Those newt habitats are ponds with small (10-20 cm) and medium (20-40 cm) depth, and of relatively small sizes (10-20 m²). These ponds are filled by vegetal remnants and many times filled with grassy vegetation. They can also be found where secondary brooks conjoin, or in swampy areas with the same type of vegetation as mentioned above.

The lowest altitude where we found all four species of newts in one habitat was 340m at Oațu and Poieni, while the highest altitude with all four was 570 m at Potoci (which is situated out of the area proposed as natural reservation). Also worth mentioning is the fact that *Triturus alpestris* and *Triturus montadoni* appear at 340 m altitude, these two being considered as mountain species, found in Romania at altitudes over 500 m or 700 m (Fuhn 1960, Cogălniceanu et al 2000). Nevertheless, these species had been spotted before at lower altitudes (210 m at Baia Mare - Micluță 1970 and recently *Triturus alpestris* at low altitudes in North-West Romania - Covaciu Marcov et al 2003, 2005 a, b). In Neamț County this phenomenon was not previously noticed, probably due to the small number of studies made there; only recently, the presence of the newt between 300 m and

400 m has been indicated (Ghiurcă et al 2005).

The main factors that have a negative effect on the caudate from Neamț County are:

- uncontrolled forest exploitations that are destroying the breeding ponds.

- the abusive capture by the locals and tourists for commercial purposes (commercialisation as pets).

- the use of pesticides and herbicides

- the deliberate dry-ups of the ponds from Prăjesti and Goșmani that led to disappearance of the newts' breeding habitats.

- the heavy traffic in the forested areas of the county (Potoci, Bicaz, Bicaz Chei, Bicazul Ardelean, Tazlău, Neachiț, Oanțu, Poieni, Cuiejdiu and Pângărați), which claims some victims among the newts.

Acknowledgements. We would like to thank the group of teachers from The Technical College of Forestry from Piatra Neamț for their support and my mother, Elena Gherghel, for the financial support. We also want to thank Mr Al. Iftimie and Dan Cogălniceanu for their useful observations on the material.

References

Arntzen J. W., Butger R. J. F., Cogălniceanu D., Wallis G. P. (1997): The distribution and conservation status of the Danube crested newt, *Triturus dobrogicus*. *Amphibia – Reptilia*, 18, 133 – 142.

Borcea M., Vancea St., 1981. Observatii asupra amfibiiilor si reptilelor din zona Cheile Bicazului - Lacu Rosu in perioada 1978-1979. *Ocot. Nat. med. Jnconj.* 25, 1, 91-95

Cogălniceanu D., Aioanei F., Bogdan M. 2000. *Amfibienii din România, Determinator*. Ed. Ars Docendi, București, 1 – 99.

Covaciu - Marcov S. D., Cupșa D., Telcean I., Sas I., A. Cicort, 2003. Contribuții la cunoașterea herpetofaunei din regiunea cursului mediu și

inferior al Crișului Negru (Județul Bihor, România). *Oltenia, Studii și Comunicări, Științele Naturii*, Vol. XIX, 189 – 194.

Covaciu - Marcov S. D., Cicort - Lucaciu A. Șt., Sas I., Bredet A. M., Bogdan H., 2005 a. Herpetofauna from the basin of Mureș river in Arad county, Romania. *Mediul cercetare, protecție și gestiune*, 5, Cluj –Napoca, 147 – 152.

Covaciu - Marcov S. D., Cicort - Lucaciu A. Șt., Sas I., Ile R. D., 2005 b. The herpetological fauna of “Culmea Codrului” (Satu - Mare county, Romania). *Analele Univ. din Craiova*, Vol XLVI, 163 – 168.

Fuhn, I., E. (1960): *Fauna R.P.R. – Amphibia*. vol. XIV, fascicula 1, Ed. Acad. R.P.R., București.

Geormăneanu, C., 1975 - The karyotype of the Urodele Amphibian *triturus montandoni*. *Revue roum. Biol. Zool.* 20 - 275-27

Ghiurca, D., Rosu, S., Gherghel, I.(2005): Preliminary data concerning the herpetofauna in Neamț County (Romania), *Analele Univ. Oradea, Fasc. Biologie*, Tom. XII, 53-62 pp.

Micluță H., 1970. Note faunistice herpetologice din Județul Maramureș. *Bul. Științ. Inst. Pedagog. Baia Mare, Ser. Biol.*, 2: 39 – 42.

Ion I., Valenciu, 1986 - Studiul variabilitatii unor populatii de salamandre (Salamandra salamandra). *Anal Stiint. Univ. Al.I.Cuya, iasi, Ser. Biol.* 32, 2, 114-117

Ionescu V., Miron I., Munteanu D., Simionescu V., 1968. *Vertebrate din Bazinul montan al Bistriței. Lucrările Stațiunii de cercetări Biologice, Geologice și Geografice “Stejarul”*, 1, 375 – 437.

Iftime Al., 2005. *Amfibieni. În: Cartea Roșie a Veretebratelor din România*, editori: Botnariuc & Tatole. Ed. Acad. Române, 1 – 325.

Șova C. (1970): Contribuții la cunoașterea faunei de Amfibii din bazinul mijlociu al Siretului. *Stud. Cerc. Ști. Nat. Inst. Pedagog. Bacău*, 3, 101 – 110.

Sova c. 1972 - Contributii la studiul ecologiei amfibiilor (ordinul caudata, genul Triturus) din bazinul riului siret. Teza de doctorat. *Universitatea din Buc.* 5, 1-198

Submitted: 17 October 2005 / Accepted: 22 June 2006

*Corresponding Editor: I. Sas
English Language Editor: V. Flutur*

