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THE PRESENCE OF *VERONICA* SPECIES IN DIFFERENT NATURA 2000 HABITAT TYPES IN ROMANIA

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Abstract: A principal objective of this study was to summarise the distribution of *Veronica* species in Romania, where such an inventory has not existed before. Taxa of *Veronica* genus were identified in 311 plant associations and 36 subassociations framed in 132 alliances. Of the 311 plant associations, 138 are included in various types of NATURA 2000 Habitats. The review of phytosociological data reveals the presence of *Veronica* taxa in 42 types of Natura 2000 habitats with scientific significance. Some of these *Veronica* taxa are characteristic species for alliances (i.e. *Veronicion baumgartenii* Coldea 1991, *Veronico officinalis-Quercion* Pop 1971) or differential species at plant association level (*Veronico baumgartenii-Saxifragetum bryoidis* Boşcaiu *et al.* 1977).

Keywords: *Veronica* genus, Natura 2000 habitats, plant associations

Introduction

Veronica is considered among the richest genera of the vascular flora of Romania as well as of other European countries. As regards their systematic position, *Veronica* species were included until recently in the Scrophularioideae (Antirrhinoideae) subfamily, *Scrophulariaceae* family, Scrophulariales order, Asterideae subclass, Magnoliopsida class [7]. Because there are several classification systems for this genus, here we mention three of them, which we consider most recent. The position of the genus *Veronica* in some classification systems is as follows:

- Thorne (1992) – Lamiales/Gentianaceae/Dicotyledoneae [29].
- Strasburger *et al*. (1998) – Scrophulariales/Lamianae/Asteridae s.l. [28].
- APG II (2003) – Lamiales/Euasteridae I, *Veronica* species being transferred to the family Plantaginaceae [33].

A principal objective of this study was to summarise the distribution of *Veronica* taxa in Romania, where such an inventory has not existed before (the data in the Abstract are subsequent to those in the Romanian Flora, 1960, vol.VII) [34].

Materials and Methods

The large area of the country, the diversity of biogeographical areas (Alpine, continental, Pannonian, steppe), the absence of recent and centralized information on the species of *Veronica*, as well as the lack of an update of the habitats where these species occur, have required a particular methodology that allows the application of several selection criteria (threatened species, habitats threatened, great botanical importance).

In order to gather chorological, ecological and coenological data about the species and subspecies of *Veronica*, information in the specialized literature was consulted, followed by numerous field trips and laboratory determinations (as required). Composite distributional, ecological, and phytocenological field observations were conducted on mature plants, then all the characteristics of the biotope were noted down. The research was carried out according to the itinerary, given the large area of Romania. At first, we checked locations quoted in the literature,

after which we moved to identify other locations. Thus, in an attempt to identify, determine and collect botanical material, we tried to cover a large and varied territory. The species identified come from numerous counties and from biotopes specific to Romania.

All these data are very important for phytosociological studies. To describe them, we used the most recent phytosociological publications. The syntaxonomic nomenclature was adopted under a strict acceptance of the provisions of the International Code of Phytosociological Nomenclature.

Names of plant associations were adopted in accordance with the provisions set out in the *Code of Phytosociological Nomenclature* [32] and with the indications of syntaxonomy in *Notions fondamentales de phytosociologie* [15].

Results and Discussion

Our information covers almost all known *Veronica* taxa in the spontaneous flora of Romania. *Flora Europaea* [30] includes 62 species, with numerous infraspecific taxa, and the Flora of Romania (vol. VII) lists 41 species and three hybrids. Recent papers on the flora of Romania represent only 37 species, 10 subspecies, a variety and four hybrids (Table 1).

Table 1: Alphabetical list of taxa of the genus *Veronica* in Romania

TAXON	TAXON
Veronica acinifolia L.	*Veronica multifida* L.
Veronica agrestis L.	*Veronica officinalis* L.
Veronica alpina L.	*Veronica opaca* Fries
Veronica anagallis-aquatica L.	*Veronica orchidea* Crantz
Veronica anagalloides Guss.	*Veronica peduncularis* Bieb.
Veronica aphylla L.	*Veronica peregrina* L.
Veronica arvensis L.	*Veronica persica* Poiret
Veronica austriaca L.	*Veronica polita* Fries
Veronica bachofenii Heuffel	*Veronica praecox* All.
Veronica baumgartenii Roemer et Schultes	*Veronica prostrata* L.
Veronica beccabunga L.	*Veronica scardica* Griseb.
Veronica bellidioides L.	*Veronica scutellata* L.
Veronica catenata Pennell	*Veronica serpyllifolia* L. subsp. *humifusa* (Dicks.) Syme
Veronica chamaedrys L. subsp. *chamaedrys*	*Veronica serpyllifolia* L. subsp. *serpyllifolia*
Veronica chamaedrys L. subsp.*vindobonensis* M.A.Fisch	*Veronica spicata* L. subsp. S*picata*
Veronica crassifolia Wierzb. ex Heuff.	*Veronica spicata* L. subsp. *barrelieri* (Schott ex Roem. & Schult.) Murb.
Veronica dillenii Crantz	*Veronica spuria* L.
Veronica filiformis Sm.	*Veronica teucrium* L.
Veronica fruticans Jacq.	*Veronica triphyllos* L.
Veronica hederifolia L. subsp. *hederifolia*	*Veronica urticifolia* Jacq.
Veronica hederifolia L. subsp. *triloba* (Opiz.) Čelak.	*Veronica verna* L.
Veronica incana L.	*Veronica x decipiens* Nyár.
Veronica jacquinii Baumg.	*Veronica x handelii* Watzl
Veronica longifolia L. subsp. *longifolia*	*Veronica x mixta* Klastersky
Veronica longifolia L. subsp. *maritima* (L.) Soó & Borsos	*Veronica x tzesne* Resm.
Veronica montana L.	Total: 51 taxa

Table 2: List of *Veronica* taxa occurring in various Natura 2000 habitat types and plant associations

Nr. crt.	*Veronica* taxon	NATURA 2000 HABITAT TYPE	PLANT ASSOCIATION
	COASTAL AND HALOPHYTIC HABITATS	**SALT AND GYPSUM INLAND STEPPES**	
1.	*Veronica arvensis* L. *Veronica triphyllos* L. *Veronica anagallis-aquatica* L. *Veronica scutellata* L.	1530* Pannonic salt-steppes and salt-marshes; [5,24]	*Achilleo-Festucetum pseudovinae* Soó (1933) Borhidi 1996 *Aeluropo-Salicornietum* Krausch 1965 *Scorzonero parviflorae-Juncetum gerardii* (Wenzl 1934) Wendelberger 1943
	FRESHWATER HABITATS	**STANDING WATER**	
2.	*Veronica anagallis-aquatica* L. *Veronica anagalloides* Guss. *Veronica beccabunga* L. *Veronica serpyllifolia* L.	3130 Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or *Isoëto-Nanojuncetea*; [5,8,18]	*Eleocharidetum acicularis* Koch 1926 em. Oberd. 1957 *Juncetum bufonii* Felföldy 1942
3.	*Veronica anagallis-aquatica* L. *Veronica anagalloides* Guss. *Veronica scutellata* L. *Veronica beccabunga* L.	3150 Natural eutrophic lakes with *Magnopotamion* or *Hydrocharition*-type vegetation; [2,5,6,23,25]	*Lemnetum minoris* Soó 1927 *Lemno-Hydrocharitetum morsus-ranae* (Oberd.) Passarge 1978 *Lemno-Utricularietum vulgaris* Soó (1928) 1947 *Najadetum minoris* Ubrizsy 1941 *Potamogetonetum lucentis* Hueck 1931 *Potamo perfoliati-Ranunculetum circinati* Sauer 1937 *Stratiotetum aloidis* Nowinski 1930 *Zannichellietum pedicellatae* Nordh. 1954 em. Pott 1992
4.	*Veronica anagallis-aquatica* L. *Veronica beccabunga* L.	3160 Natural dystrophic lakes and ponds; [5]	*Nymphoidetum peltatae* (Allorge 1922) Bellot 1951 *Trapetum natantis* Kárpati 1963
		RUNNING WATER	
5.	*Veronica beccabunga* L.	3220 Alpine rivers and the herbaceous vegetation along their banks; [8,17]	*Cardaminetum opizii* Szafer *et al*. 1923 *Carici remotae-Calthaetum laetae* Coldea (1972) 1978 *Philonotido-Calthetum laetae* (Krajina 1933 Coldea 1991
6.	*Veronica anagallis-aquatica* L.	3260 Watercourses of plains to montane levels with the *Ranunculion fluitantis* and *Callitricho-Batrachion* vegetation; [6]	*Callitrichetum palustris* (Dihoru 1975) Burescu 1999 *Ranunculetum aquatilis* (Sauer 1947) Géhu 1961

7.	*Veronica anagallis-aquatica* L. *Veronica beccabunga* L. *Veronica hederifolia* L.	3270 Rivers with muddy banks with *Chenopodion rubri* p.p. and *Bidention* p.p. vegetation; [5,6,9,17]	*Bidentetum cernui* (Kobenza 1948) Šlavnič 1951 *Polygono lapathifolii-Bidentetum* Klika 1935 *Bidenti-Polygonetum hydropiperis* Lohm. in Tüxen 1950 *Echinochloo-Polygonetum lapathifolii* Soó et Csűrös 1974 *Echinochloo-Polygonetum lapathifolii* Soó et Csűrös 1974, *chenopodietosum polyspermi* (Morariu 1943) Soó 1961
	TEMPERATE HEATH AND SCRUB		
8.	*Veronica chamaedrys* L. *Veronica officinalis* L.	4030 European dry heaths; [25]	*Vaccinio-Callunetum vulgaris* Büker 1942
9.	*Veronica baumgartenii* R. et Sch. *Veronica officinalis* L. *Veronica montana* Jusl.	4060 Alpine and Boreal heaths; [8,12,17,25]	*Cetrario-Loiseleurietum procumbentis* Br.-Bl. *et al.* 1939 *Campanulo abietinae-Juniperetum* Simon 1966 *Campanulo abietinae-Vaccinietum* (Buia et al. 1962) Boşcaiu 1971 *Junipero-Bruckenthalietum spiculifoliae* Horvat 1936 *Empetro-Vaccinietum gaultherioidis* Br.-Bl. 1926 *Rhododendro myrtifolii-Vaccinietum* Borza (1955) 1959 em. Boşcaiu 1971
10.	*Veronica urticifolia* Jacq.	4080 Sub-Arctic *Salix* spp. Scrub; [8]	*Salici–Alnetum viridis* Colić et al. 1962
11.	*Veronica chamaedrys* L.	40A0* Subcontinental peri-Pannonic scrub; [2]	*Syringo-Fraxinetum orni* Borza 1958 em. Resmeriță 1972
	NATURAL AND SEMI-NATURAL GRASSLAND FORMATIONS	**NATURAL GRASSLANDS**	
12.	*Veronica alpina* L. *Veronica baumgartenii* R. et Sch.	6150 Siliceous alpine and boreal grasslands; [1,8,18,27]	*Primulo-Caricetum curvulae* Br.-Bl. 1926 em. Oberd.1957 *Arenarietum biflorae* Voik 1976 *Nardo-Gnaphalietum supini* Bartsch 1940 *Luzuletum alpino-pilosae* Br.-Bl. 1926 *Polytrichetum sexangularis* Br.-Bl. 1926 *Potentillo chrysocraspedae-Festucetum airoidis* Boşcaiu 1971 *Oreochloo-Juncetum trifidi* Szafer *et al.* 1927 *Salicetum herbaceae* Br.-Bl. 1913

13.	*Veronica alpina* L. *Veronica baumgartenii* R.et Sch.	6170 Alpine and subalpine calcareous grasslands; [8.27]	*Salicetum retuso-reticulatae* Br-Bl. 1926 *Salicetum retuso-reticulatae, dryadetosum* Schneider-Binder et Voik 1979 *Salicetum retuso-reticulatae saxifragetosum oppositifolii* Schneider-Binder et Voik 1979 *Soldanello hungaricae-Salicetum kitaibelianae* Coldea 1965 *Soldanello pusillae-Salicetum kitaibelianae* (Boşcaiu 1971) Coldea 1993
14.	*Veronica prostrata* L. *Veronica spicata* L. *Veronica orchidea Crantz*	6190 Rupicolous Pannonic grasslands (*Stipo-Festucetalia pallentis*); [18,21,25]	*Thymo comosi-Festucetum rupicolae* (Csűrös et Gergely 1959) Pop et Hodişan 1985
		SEMI-NATURAL DRY GRASSLANDS AND SCRUBLAND FACIES	
15.	*Veronica teucrium* L.*Veronica chamaedrys* L. *Veronica polita* Fries *Veronica prostrata* L. *Veronica spicata* L. *Veronica orchidea Crantz*	6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometea*) (* important orchid sites); [9,13,21,22,25,26]	*Brachypodio pinnati-Festucetum rupicolae* Ghişa 1962 *Carici humilis-Brachypodietum pinnati* Soó 1947 *Polygalo majoris-Brachypodietum pinnati* Wagner 1941 *Danthonio-Brachypodietum pinnati* Soó 1946 *Festuco rupicolae-Danthonietum provincialis* Csűrös *et al.* 1961 *Rhinantho rumelici-Brometum erecti* Sanda et Popescu 1999 *Thymo comosi-Caricetum humilis* (Zólyomi 1931) Morariu et Danciu 1974
16.	*Veronica chamaedrys* L. *Veronica officinalis* L. *Veronica serpyllifolia* L.	6230* Species-rich *Nardus* grasslands, on siliceous substrates in mountain areas (and sub-mountain areas, in Continental Europe); [4,11,17,18,25,31]	*Scorzonero roseae-Festucetum nigricantis* (Puşcaru et al. 1956) Coldea 1978 *Hieracio pilosellae-Nardetum strictae* Pop *et al.* 1988 *Violo declinatae-Nardetum* Simon 1966
17.	*Veronica austriaca* L. *Veronica jacquinii* Baumg. *Veronica teucrium* L. *Veronica chamaedrys* L *Veronica prostrata* L *Veronica spicata* L. *Veronica orchidea Crantz*	6240* Sub-pannonic steppic grasslands; [2,13,16,21,22,26]	*Medicagini minimae-Festucetum valesiacae* Wagner 1941 *Agrostio-Festucetum valesiacae* Borisavlević Jovanović-Dunjić et Mišic 1955 *Botriochloetum ischaemi* (Krist. 1937) Pop 1977 *Festucetum valesiaco-rupicolae* Csűrös et Kovács 1962 *Festuco rupicolae-Caricetum humilis* Soó (1930) 1947 *Stipetum capillatae* (Hueck 1931) Krausch 1961 *Thymo pannonici–Chrysopogonetum grylli* Doniţă *el al.* 1992

18.	*Veronica arvensis* L. *Veronica austriaca* L. *Veronica jacquinii* Baumg. *Veronica teucrium* L. *Veronica chamaedrys* L. *Veronica prostrata* L. *Veronica spicata* L. *Veronica orchidea Crantz* *Veronica triphyllos* L.	62C0* Ponto-Sarmatic steppes; [5,9,22,25]	*Cynodonto-Poëtum angustifoliae* (Rapaics 1926) Soó 1957 *Danthonio-Stipetum stenophyllae* Ghişa 1941 *Elytrigietum hispidi* (Dihoru 1970) Popescu et Sanda 1988 *Taraxaco serotini-Bothriochloetum ischaemi* (Burduja *et al.*1956) Sârbu et al. 1999 *Taraxaco serotini-Festucetum valesiacae* (Burduja *et al.* 1956, Răvăruţ et al. 1956) Sârbu et al. 1999 *Artemisio austriacae-Poëtum bulbosae* Pop 1970 *Stipetum lessingianae* Soó (1927) 1947 *Stipetum pulcherrimae* Soó 1942 *Stipetum stenophyllae* Soó 1944
		SEMI-NATURAL TALL-HERB HUMID MEADOWS	
19.	*Veronica chamaedrys* L.	6410 *Molinia* meadows on calcareous, peaty or clayey silt-laden soils (*Molinion caeruleae*); [26]	*Junco-Molinietum* Preising 1951 ex Klapp 1954
20.	*Veronica anagallis-aquatica* L. *Veronica beccabunga* L. *Veronica chamaedrys* L. *Veronica officinalis* L. *Veronica scutellata* L. *Veronica urticifolia* Jacq.	6430 Hydrophilous tall-herb fringe communities of plains and of the montane to alpine levels; [4,8,9,11,17,18,21,26]	*Adenostylo-Doronicetum austriaci* Horvat 1956 *Cirsio waldtsteinii-Heracleetum transsilvanici* Pawł.ex Walas 1949 *Arunco-Petasitetum albi* Br.-Bl. et Sutter 1977 *Angelico-Cirsietum oleracei* Tüxen 1937 *Scirpetum sylvatici* Ralski 1931 *Telekio speciosae-Aruncetum dioici* Oroian 1998 *Telekio-Petasitetum hybridi* (Morariu 1967) Resmeriţă et Raţiu 1974 *Telekio-Petasitetum hybridi* (Morariu 1967) Resmeriţă et Raţiu 1974 subass. *aruncetosum dioici* Oroian 1998
21.	*Veronica arvensis* L. *Veronica beccabunga* L. *Veronica chamaedrys* L.	6440 Alluvial meadows of river valleys of the *Cnidion dubii* [4,25,26]	*Agrostietum stoloniferae* (Ujvárosi 1941) Burduja *et al.* 1956 *Cirsio cani-Festucetum pratensis* Májovsky ex Ruzickova 1975

		MESOPHILE GRASSLANDS	
22.	*Veronica chamaedrys* L.	6510 Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*); [18,24,25]	*Arrhenatheretum elatioris* Br.-Bl. ex Scherrer 1925 *Arrhenatheretum elatioris* Br.-Bl ex Scherrer 1925 *holcetosum lanati* Csűrös Șt.1970 *Arrhenatheretum elatioris* Br.-Bl ex Scherrer 1925 *festucetosum pratensis* (Soó 1940) Slavnič 1948 *Arrhenatheretum elatioris* Br.-Bl. ex Scherrer 1925 *festucetosum rupicolae* Eggler 1958
23.	*Veronica arvensis* L. *Veronica jacquinii* Baumg. *Veronica chamaedrys* L. *Veronica officinalis* L. *Veronica prostrata* L. *Veronica serpyllifolia* L. *Veronica spicata* L. *Veronica orchidea Crantz*	6520 Mountain hay meadows; [2,4,9,10,12,17,18,21,24,25]	*Festuco rubrae-Agrostietum capillaris* Horvat 1951 *Anthoxantho-Agrostietum capillaris* Silinger 1933 *Poo-Trisetetum flavescentis* (Knapp 1951) Oberd. 1957 *Trisetetum flavescentis* (Schröter) Brockmann 1907
	RAISED BOGS AND MIRES AND FENS	**SPHAGNUM ACID BOGS**	
24.	*Veronica anagallis-aquatica* L. *Veronica beccabunga* L. *Veronica scutellata* L.	7140 Transition mires and quaking bogs; [8.11]	*Caricetum diandrae* Jon. 1932 em. Oberd. 1957 *Sphagno-Caricetum rostratae* Steffen 1931
		CALCICOLOUS FENS	
25.	*Veronica beccabunga* L. *Veronica chamaedrys* L.	7230 Alkaline fens; [17,18]	*Carici flavae-Eriophoretum latifolii* Soó 1944
	ROCKY HABITATS AND CAVES	**SCREE**	
26.	*Veronica alpina* L. *Veronica baumgartenii* R. et Sch.	8110 Siliceous scree of the montane to snow levels (*Androsacetalia alpinae* and *Galeopsietalia ladani*); [8,27]	*Festucetum pictae* Krajina 1933 *Poo contractae-Oxyrietum digynae* Horvat *et al*. 1937 *Saxifragetum carpathicae-cymosae* Coldea (1986) 1990 *Saxifrago carpathicae-Oxyrietum digynae* Pawł. *et al.* 1928 *Veronico baumgartenii-Saxifragetum bryoidis* Boşcaiu *et al.* 1977

27.	*Veronica baumgartenii* R. et Sch. *Veronica bellidioides* L. *Veronica urticifolia* Jacq.	8120 Calcareous and calcaschist screes of the montane to alpine levels (*Thlaspietea rotundifolii*); [1,8,17]	*Cerastio calcicolae-Saxifragetum moschatae* Coldea (1986) 1990 *Acino-Galietum anisophylli* Beldie 1967 *Cardaminopsio neglectae-Papaveretum* Coldea et Pânzaru 1986 *Parietarietum officinalis* Csűrös 1958 *Saxifragetum moschatae-aizoidis* Boşcaiu 1971 *Sedo fabariae-Geranietum macrorrhizi* Boşcaiu et Tauber 1977
28.	*Veronica urticifolia* Jacq.	8160* Medio-European calcareous scree of hill and montane levels; [8,18]	*Gymnocarpietum robertianae* Kaiser 1926 *Achnatheretum calamagrostis* Br.-Bl. 1918
		ROCKY SLOPES WITH CHASMOPHYTIC VEGETATION	
29.	*Veronica teucrium* L. *Veronica urticifolia* Jacq.	8210 Calcareous rocky slopes with chasmophytic vegetation [8,17,18]	*Asplenio-Cystopteridetum fragilis* Oberd. (1936) 1949 *Asplenio-Cystopteridetum fragilis* Oberd. (1936) 1949 subass. *campanuletosum carpaticae* (Sanda *et al.* 1977) Coldea 1992 *Asplenio-Silenetum petraeae* Boşcaiu 1971 *Asplenio quadrivalenti-Poëtum nemoralis* Soó ex Gergely *et al*. 1966 *Asplenietum trichomanis-rutae-murariae* Kuhn 1937, Tuxen 1937
30.	*Veronica bachofenii* Heuff. *Veronica baumgartenii* R. et Sch. *Veronica officinalis* L. *Veronica orchidea Crantz*	8220 Siliceous rocky slopes with chasmophytic vegetation; [8,12,21,27]	*Asplenietum septentrionalis* Schwick 1944 *Asplenio trichomanis-Poetum nemoralis* Boşcaiu 1971 *Asplenietum septentrionalis-adianti-nigri* Oberd. 1938 *Diantho henteri-Silenetum lerchenfeldianae* Stancu 2000 *Sempervivetum heuffelii* Schneider-Binder 1969 *Silenetum dinaricae* Schneider-Binder et Voik 1976 *Woodsio ilvensis-Asplenietum septentrionalis* Tüxen 1937 subas. *dianthetosum henteri* (Schneider-Binder 1972) Drăgulescu 1988
	FORESTS	**TEMPERATE DECIDUOUS FORESTS**	
31.	*Veronica officinalis* L. *Veronica urticifolia* Jacq.	9110 *Luzulo-Fagetum* beech forests; [9,10,12]	*Hieracio rotundati-Fagetum* (Vida 1963) Täuber 1987
32.	*Veronica chamaedrys* L. *Veronica officinalis* L. *Veronica urticifolia* Jacq.	9130 *Asperulo-Fagetum* beech forests; [2,9,10,12,25]	*Carpino-Fagetum* Paucă 1941 *Galio schultesii-Fagetum* (Burduja et al. 1973) Chifu et Ştefan 1994

33.	*Veronica chamaedrys* L. *Veronica officinalis* L. *Veronica urticifolia* Jacq.	9170 *Galio-Carpinetum* oak-hornbeam forests; [2,17,26]	*Carici pilosae-Carpinetum* Neuhäusl et Neuhäuslova-Novotná 1964
34.	*Veronica anagallis-aquatica* L. *Veronica austriaca* L. *Veronica chamaedrys* L. *Veronica serpyllifolia* L. *Veronica urticifolia* Jacq.	91E0*Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*); [2,5,10,17,18,21,25,26]	*Salicetum albae* Issler 1924 *Stellario nemorum-Alnetum glutinosae* (Kästner 1938) Lohmeyer 1957 *Telekio speciosae-Alnetum incanae* Coldea (1986) 1991 *Telekio speciosae-Alnetum incanae* Coldea (1986) 1991 subass. *alnetosum glutinosae* Oroian 1998
35.	*Veronica teucrium* L.	91F0 Riparian mixed forests of *Quercus robur, Ulmus laevis* and *Ulmus minor, Fraxinus excelsior* or *Fraxinus angustifolia* along the great rivers (*Ulmenion minoris*); [5]	*Quercetum roboris-pedunculiflorae* Simon 1960
36.	*Veronica teucrium* L.	91I0* Euro-Siberian steppic woods with *Quercus* spp.; [5]	*Quercetum pedunculiflorae* Borza 1937
37.	*Veronica officinalis* L. *Veronica chamaedrys* L.	91M0 Pannonian-Balkanic turkey oak-sessile oak forests; [2,25]	*Carpino-Quercetum cerris* Klika 1938 *Quercetum frainetto-cerris* (Georgescu 1945) Rudski 1949 *Quercetum petraeae-cerris* Soó 1957
38.	*Veronica chamaedrys* L. *Veronica urticifolia* Jacq.	91Q0 Western Carpathian calcicolous *Pinus sylvestris* forests; [1,17]	*Seslerio rigidae-Pinetum sylvestris* Csűrös *et al*. 1988
39.	*Veronica chamaedrys* L. *Veronica officinalis* L. *Veronica urticifolia* Jacq.	91V0 Dacian beech forests (*Symphyto-Fagion*); [2,9,10,11,17,18,21,26]	*Symphyto cordati-Fagetum* Vida 1959 *Pulmonario rubrae-Fagetum* (Soó 1964) Täuber 1987 *Leucanthemo waldsteinii-Fagetum* (Soó 1964) Täuber 1987 *Phyllitidi-Fagetum* Vida (1959) 1963
40.	*Veronica chamaedrys* L.	91Y0 Dacian oak-hornbeam forests; [16]	*Aro orientalis–Carpinetum* (Dobrescu et Kovács 1973) Täuber 1992 *Tilio tomentosae-Quercetum delechamii* Sârbu 1978 *cotinetosum coggygriae* Sârbu 1979
		MEDITERRANEAN DECIDUOUS FORESTS	
41.	*Veronica polita* Fries	92D0 Southern riparian galleries and thickets (*Nerio-Tamaricetea* and *Securinegion tinctoriae*); [10]	*Calamagrostio-Tamaricetum ramosissimae* Simon et Dihoru (1962) 1963
		TEMPERATE MOUNTAINOUS CONIFEROUS FORESTS	
42.	*Veronica officinalis* L. *Veronica serpyllifolia* L. *Veronica urticifolia* Jacq.	9410 Acidophilous *Picea* forests of the montane to alpine levels (*Vaccinio-Piceetea*) [1,11,12,17,18,21,25,26]	*Hieracio rotundati-Piceetum* Pawł. et Br.-Bl. 1939 *Leucanthemo waldsteinii-Piceetum* Krajina 1933

During our study, we identified 23 species of the genus *Veronica* in Romania (Table 2). The most common species identified were: *Veronica chamaedrys, V. officinalis, V. beccabunga, V. persica, V. spicata* subsp. s*picata* and *V. spicata* subsp. *orchidea.*

Veronica species have been identified in different habitat types, in which they contribute to the ecological and coenotic integrity of plant assemblages. Taxa of *Veronica* were recorded in **311** plant associations and **36** plant sub-associations, included within **132** alliances. Out of 311 plant associations, **138** are included in various NATURA 2000 habitat types [14]. The review of phytosociological data reveals the presence of *Veronica* taxa in **42** habitat types with scientific significance (Table 2).

Some of the *Veronica* species characterize alliances (*Veronicion baumgartenii* Coldea 1991, *Veronico officinalis-Quercion* Pop 1971) or differentiate particular plant associations (*Veronico baumgartenii-Saxifragetum bryoidis* Boşcaiu *et al.* 1977). We note that seven species of *Veronica* were not found in any plant association studied.

The completion of the floristic conspectus revealed the threats that species of the genus *Veronica* have been subjected to in recent years in some areas of the country. Due to these anthropogenic impacts, **7** species and **1** subspecies of *Veronica* are threatened and are included in the Red List of the vascular flora of Romania [19] (Table 3).

Table 3: Protected species of the genus *Veronica*

IUCN Cat. (R-RARE)	Taxon
R	*Veronica alpina* L.
R	*Veronica aphylla* L.
R	*Veronica bachofenii* Heuffel
R	*Veronica baumgartenii* Roemer et Schultes
R	*Veronica catenata* Pennell
R	*Veronica crassifolia* Wierzb. ex Heuff.
R	*Veronica fruticans* Jacq.
R	*Veronica multifida* L.

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PREZENŢA SPECIILOR DE *VERONICA* ÎN DIFERITE TIPURI DE HABITATE NATURA 2000 DIN ROMÂNIA

(Rezumat)

Obiectivul urmărit în cadrul acestui studiu a fost realizarea conspectului privind distribuţia speciilor de *Veronica* în România, nefiind, până în prezent, un asemenea inventar (datele conspectului fiind ulterioare celor din Flora României, 1960, vol.VII).

Speciile de *Veronica* au fost identificate în diferite tipuri de habitate. Ele contribuie la realizarea ambianţei ecologice şi cenotice a diverse grupări vegetale. Astfel, taxoni de *Veronica* au fost identificaţi în 311 asociaţii vegetale şi 36 subasociaţii vegetale, incluse în 132 alianţe (tabel nr. 2).

Unele dintre speciile de *Veronica* caracterizează alianţe (*Veronicion baumgartenii* Coldea 1991, *Veronico officinalis-Quercion* Pop 1971) sau sunt diferenţiale pentru diferite asociaţii vegetale: *Veronico baumgartenii-Saxifragetum bryoidis* Boşcaiu et al. 1977.

Întocmirea conspectului a scos la iveală riscurile naturale din anumite zone ale ţării, la care sunt supuse în ultimii ani speciile genului *Veronica*. Datorită acestor impacte antropice, **7** specii şi o subspecie de *Veronica* sunt periclitate şi figurează în Lista Roşie a florei vasculare a României.