

Geographical Analysis and the Problem of Protection of Endemic and Relict Plants of the Chechen Republic

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Abstract. This report provides a geographical analysis of endemic and relict plants of the Chechen Republic. And the problems of the screen of these species are considered. The geographical spectrum is represented by 23 geographical elements. The basis of this analysis is the compilation of a spectrum of geographical elements of endemic and relict plants. The authors carried out a geographical analysis and the problem of protection of the studied species.

1 Introduction

The problem of preserving the diversity of living organisms living on earth was posed as early as 1948 by the International Union for the Conservation of Nature and Natural Resources (IUCN). Under his auspices, international lists of endangered species in need of protection began to be drawn up. Since 1966, these lists have been regularly supplemented and updated. In 1973, a special international convention for the protection of plants and animals included in the Red Book was concluded. This served as a start to the creation of red books of countries and regions (Aliiev, 1998).

Endemic species (taxa unique to a particular geographical area) are characteristic elements of local biodiversity. Narrow endemics occupy isolated habitats, often associated with limited ranges of ecological conditions or small common geographic ranges. Relicts are species left over from a group that are largely extinct. They can be identified both on the basis of phylogenetic analysis and on the basis of the extinction fossil record.

Purpose and objectives of the study. The purpose of this analysis is to determine the conduct of a geographical analysis and the problem of protecting the studied species.

2 Research Methodology

The material for the work is based on field research and observations of the authors. Route-geobotanical, route-floristic methods were used.

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The storage of herbarium plant collections is a very important indicator for field botanical research. The treated plant species are stored in herbariums and then used for taxonomic, floristic and phytogeographic studies. Field and literature data are very important sources of scientific information.

For the first time, a complete list of endemic and relict plants is given and compiled

3 Results and Discussions

Studies have helped to determine that in total on the territory of the Chechen Republic in the natural environment 180 species of plants grow in the wild, united in 65 families.

Flora elements have different types of habitats, where they are isolated from the main habitats. The results of the study contribute to the knowledge of the phytogeographic classification of specific regions. Various chorions determine the structure and composition of the flora by their action [1,2,3,4,5].

Geographical analysis of endemic and relict plants of the Chechen Republic revealed 23 geographical elements, among which the predominant group is the general Arctic geoelements. Most geographic elements have low ecological plasticity [1]. The geographical range of endemic and relict plants of the Chechen Republic is shown in Table 1.

A pluri-regional geoelement. It has 7 species (3.9%). These are such species as *Botrychium lunaria* (L.) Sw. – Moonflower, *Huperzia selago* (L.) Bernh. ex Schrank et C. Mart. (*H. petrovii* Sipl.), *Asplenium trichomanes* L. – Hairy kostenet, *Polypodium vulgare* L. – Common centipede, *Marsilea quadrifolia* L. – Four-leaved Marsilia, *Salvinia natans* (L.) All. – *Salvinia* floating, *Huperzia selago* (L.) Bernh. ex Schrank et C. Mart. (*H. petrovii* Sipl.) - Common sheep.

Holarctic geoelement. Includes 8 species (4.5%) - *Lycopodium annotinum* L. - Yearly club moss, *E. fluviatile* L. (*E. heleocharis* Ehrh.) - *Asplenium septentrionale* (L.) Hoffm. – Northern Kostenets, *Asplenium vtride* Huds. – Green kostenets, *Drosera rotundifolia* L. – Round-leaved sundew, *Pyrola rotundifolia* L. – Round-leaved wintergreen, *Galium mollugo* L. – Soft bedstraw, *Rhodococcum vitis-idaea* (L.) Avror. (*Vaccinium vitis-idaea* L.) – Common lingonberry.

Palaearctic geoelement. Only 6 species (3.4%), these are such as *Selaginella helvetica* (L.) Spring - Swiss plaunok, *Alisma plantago-aquatica* L. - Plantain chastuha, *Cypripedium calceolus* L. - Real slipper, *Lepidium pinnatifidum* Ledeb. – Pinnate watercress, *Corylus aveliana* L. – Common hazel, *Viscum album* L. – White mistletoe.

Panboreal. Includes 1 species (0.6%) - *Polystichum braunii* (Sperm.) Fee - Brown's multi-row.

Euro-Siberian geoelement. Includes 1 species (0.6%) *Actaea spicata* L.

Euro-Caucasian geoelement. The number of species is 10 (5.6%): *Ophioglossum vulgatum* L. – *Phyllitis scolopendrium* (L.) Newm. – Centipede leafwort, *Taxus baccata* L. – Berry yew, *Allium ursinum* L. – Bear onion (Wild leek), *Arctium nemorosum* Lej. – Oak burdock, *Bellis perennis* L. – Perennial daisy, *Nymphaea alba* L. – White water lily, *Lysimachia nummularia* L. – Monet loosestrife, *Ranunculus auricomus* L. – Golden buttercup, *Potentilla sterilis* (L.) Garcke – Barren cinquefoil.

Table 1. Geographical spectrum of relict and endemic species of the Chechen Republic

.	GEOELEMENT	Qty	%
GENERAL LARGIC			
1	pluri-regional	7	3.9
2	Holarctic	8	4.5

3	Palearctic	6	3.4
BOREAL ELEMENTS			
4	Panboreal	1	0.6
5	Euro-Siberian	1	0.6
6	Euro Caucasian	10	5.6
7	Caucasian	14	7.8
8	Eucaucasian	71	39.7
9	Ciscaucasian	10	5.6
10	Euxinian	5	2.8
11	Pontic	9	5.0
12	Pontic - South Siberian	5	2.8
ANCIENT MEDITERRANEAN ELEMENTS			
13	Common Ancient Mediterranean	5	2.8
14	Western Old Mediterranean	2	1.1
15	Mediterranean	3	1.7
16	East Ancient Mediterranean	1	0.6
17	Iranian - Turan	3	1.7
18	Armeno -Iranian	4	2.2
19	Turan	5	2.8
BINDING ELEMENTS			
20	sub-mediterranean	1	0.6
21	subcaucasian	5	2.8
22	Subpontic	1	0.6
23	Subturanian	2	1.1
	TOTAL	179	100.0

Caucasian geoelement . Total 14 species (7.8%): *Pinus sosnowskyi* Nakai (*P. hamata* (Stev .) Sosn .; *P. kochiana* Klotzsch) – Pine Sosnovsky, *Juni p erus oblong a* Beeb . (*J. communis* L.) - Juniper oblongata, *Muscari armeniacum* Leichtlin (*Mszo vitsianum* Baker – Armenian mouse hyacinth, *Hedera pastuchovii* Woronow - Shepherd's Ivy, *Brunnera macrophylla* (Bieb .) Johnst . – Brunner large-leaved, *Campanula collina* Beeb . - Hill bell , *Symphyandra galushkoi* Taisumov et Teimurov . (*Campanula galushkoi* Taisumov et Teimurov .) - Zimfiandra Galushko, *Oberna multifida* (Adams) Ikonn . (*S. multifida* (Adams) Rohrh .) - Oberna multidissected , *Carpinus caucasica* Grossh . (*Carpinus betulus* L.) - Caucasian hornbeam, *Rhododendron caucasicum* Pall . – Caucasian rhododendron, *Tithymalus glareosu s* (Pall , ex Bieb .) Prokh . (*E. glaeosa* Pall , ex Bieb ., *E. maleevii Tamamsch .*) - Euphorbia cartilaginous, *Colutea orientalis* Mill - Oriental Bubble, *Medicago daghestanica* Rupr . – Alfalfa Dagestan, *Microthlaspi pertoliatum* (L.) FK Mey . (*Thlaspi perfoliatum* L.).

Eucaucasian geoelement . It includes 71 species (39.7%). It's like *Allium gunibicum* Misc . ex Grossh . (*A. mirzoevii* Tscholokaschvili) - Gunib bow, *Merendera ghalgana* Otsch . - *Merendera* Ingush, *Gagea daghestanica* Levichev et Murtaazaliev - Dagestan goose onion, *Calamagrostis caucasica* Trin - Caucasian reed grass , *Elymus prokudinii* (Seredin) Tzvel . (*R. prokudinii* Serediri) - Prokudin's wheatgrass, *Festuca primae* E. Alexeev – Prima fescue, *F. daghestanica* (Tzvel .) E. Alexeev – Dagestan O., *Poa primae* Tzvel . – Prima Bluegrass, *Stipa daghestanica* Grossh . – Dagestan feather grass, *Mandenovia komarovii* (Manden .) Alava - Mandenovia Komarov, *Symphyloma graveolens* CA Mey . – odoriferous plant , *Crepis hydrophiloides* Charadze – Swampy Skerda , *Hieracium gudergomiense* Juxip - Gudergomiss hawk , *Jurinea Annae* sosn . – Anne's head , *J. filicifolia* Boiss . - N. fern , *J. ingushetica* Galushko - N. Ingush, *J. absinthifolius* Galushko - N. wormwood , *Psephellus andinus* Galushko et Alieva (C. Andina (Galushko et Alieva) Czer .) - Andean Psephillus , *P. prokhanovii* Galushko (C. prokhanovii (Galushko) Czer .) –P. Prokhanova, *P. kemulariae* Charadze (C. kemulariae (Charadze) Czer .) - P. Kemularia , *Pulicaria dolomiticum* Galushko - Dolomite flea, *Betula raddeana* Trautv . – Birch Radde, *Omphalodes rupestris* Rupr . ex Boiss . – Umbilical rock , *Alyssum andinum* Rupr . – Andean beetroot, *Draba ossetica* (Rupr .) Somm . et Levier - Ossetian Krupka, *Erucastrum subnivale* Prima - Snowy jaundice , *Isatis pseudoararatica* Galushko nomen nudum – False-Ararat woad , *Matthiola daghestanica* (Conti) N. Busch – Dagestan Levkoy, *Sameraria cardiocarpa* Trautv . – Sameraria heartfell , *Campanula andina* Rupr . – Andean bluebell, *C. annae* Kolak . – K. Anna, *C. argunensis* Rupr . - K. argunsky , *C. daghestanica* Fomin - K. Dagestan, *C. darialica* Charadze - K. darialsky , *C. fedorovii* Charadze – K. Fedorova, *C. meyeriana* Rupr . – K. Meyer, *C. petrophila* Rupr . – K. Skalny, *Symphyandra pendula* (Bieb .) A.DC. (*Campanula pendula* Bieb .) - Dangling Zymphiandra , *Cerastium kasbek* Parrot - Kazbek Yaskolka , *C. multiflorum* S.A. Meu . – I. polyflora , *Dianthus daghestanicus* Charadze – Dagestan carnation, *Petrocoma hoefftiana* (Fisch .) Rupr . – Petrokoma Göfft , *Sedum argunense* Galushko - Argun stonecrop , *Amoria elisabethae* (Grossh .) Roskov (T. elisabethae Grossh .) - Amoria (Clover) Elizabeth, *Asrtagalus supinus* Bunge - Adjacent Astracanthus , *Vavilovia formosa* (Stev .) Fed . - Babylovia is beautiful, *Corydalis bayerniana* Rupr . – *Corydalis* Bayern , *Gentiana grossheimii* Doluch . – Grossheim's gentian , *Geranium kemulariae* Charadze – Cumularia Geranium , *Hypericum asperuloides* _ Czern . Ex Turkish . – St. John's wort , *Marrubium plumosum* CA Mey . – Shandra pinnate, *Nepeta biebersteiniana* (Trautv .) Pojark . – Bieberstein's catnip , *N. cyanea* Stev . - K. blue, *N. czegemensis* Pojark . – K. chegemsky, *Scutellaria andina* Charadze – Andean skullcap, *S. leptostegia* Juz . – Sh. finely scaly, *S. raddeana* Juz.- Sh. Rudde, *Stachys fugax* Pobed . – Falling cleaner, *Primula darialica* Rupr . – Darial primrose , *P. luteola* Rupr . - P. yellow, *P. zeylamica* Charadze et Kapell . - P. tseylamsky , *Pulsatilla andina* (Rupr .) Woronow _ *tebulosica* Prima - Tebulos Buttercup , *Alchemilla elisabethae* Juz . –Cuff of Elizabeth, *A. chlorosericea* (Buser) Juz . - M. green silk , *Asperula dasyantha* Klok . – Woodruff pubescent , *Saxifraga charadzae* Otsch . –Saxifrage Kharadze , *Scrophularia charadzeae* Kem. - Nath . – Norichnik Kharadze , *S.minima* Beeb . – N. small, *Veronica bogosensis* Tumad . – Bogossian Veronica , *V. charadzeae* Kem. - Nath . -IN. Kharadze , *V. daghestanica* Rupr . ex Boiss . - V. Dagestan, *Pseudobetkeca caucasica* (Boiss .) Lincz . - Pseudo-Betkeca Caucasian and others.

Ciscaucasian geoelement . Includes 10 species (5.6%) - *iris notha* Beeb . – Iris (Iris) fake, *Centaurea pseudotanaitica* Galushko nomen nudum - Lozhnodonsky cornflower , *Onobrychis dielsii* (Sirj .) Vass . – Diels' esparcet, *O. inermis* Stev . – E. unarmed, *O. novopokrovskii* Vass . – E. Novopokrovsky, *Xanthobrychis majorovii* (Grossh .) Galushko . Majorovii Grosh .) – Xanthobrychis Mayorova, *Corydalis roseo-purpurea* (Rupr .) Galushko - Pink-Purple *Corydalis*, *Paeonia biebersteiniana* Rupr . –Bieberstein Peony ,

Rapaver bracteatum Lindl . – Poppy bracts , *Asperula dim inuta* Klok . - Reduced woodruff.

Euxinian goeement . Includes 5 species (2.8%). It's like *Acer laetum* CA Mey . – Light maple, *Asarum ibericum* Stev . ex ledeb . (*Asarum intermedium* (CA Mey .) Grossh .) - Hoof Georgian , *Dianthus imereticus* (Rupr .) Schischk . – carnation Imeretian , *Anemonoides blanda* (Schottet Kotschy) Holub (*A. blanda* Schottet Kotschy) - Anemonoides pleasant , *Helleborus caucasicus* A.Br. – hellebore caucasian .

Pontic goeement . Includes 9 species (9%). This such How *Ephedra dista* chya L. - Ephedra two-wheeled , *Juniperus sabina* L. – Juniper Cossack , *Dianthus arenarius* L. – Carnation sandy , *Asrtagalus brachylobus* Fisch. – Astracanthus short-lobed , *A. varius* SG Gmel . (*A. virgatus* Pall .) - A. varied , *Caragana mollis* (Bieb .) Bess. – Karagan mild , *Melilotus wolgicus* Poir . - Elecampane Volga , *Satureja pachyphylla* C.Koch - Savory thick-leaved , *Goniolimon besserinum* (Schult .) Kusn . – Goniolimon Besser .

Pontic - South Siberian goeement . Includes 5 species (2.8%). This such How *Ephedra dista* chya L. - Ephedra two-wheeled , *Juniperus sabina* L. – Juniper Cossack , *Asrtagalus brachylobus* Fisch. – Astracanthus short-lobed , *A. varius* SG Gmel . (*A. virgatus* Pall.) - A . varied , *Melilotus wolgicus* Poir . - Elecampane Volga .

Common Ancient Mediterranean goeement . Such species there are 5 (2.8%): *Ceterach officinarum* Willd . – Skrebnitsa drugstore , *Imperata cylindrical* (L.) Raeusch . – Imperata cylindrical , *Cotinus coggygia* Scop. – Skumpia leather , *Cornus mas* L. - dogwood common , *Centaureum spicatum* (L.) Fritsch – Centaury spiky .

Western Old Mediterranean goeement . Such species 2 (1.1%): *Juniperus hemisphaerica* J. et C.Presl (*J. depressa* Stev .) - Juniper hemispherical , *Trigonella coerulea* (Bieb .) Halacsy - Fenugreek bluish .

Mediterranean goeement . Includes 3 species (1.7%). This such How *Sternbergia colchiciflora* Waldst . et Kit. – Sternbergia Colchicum , *Ononis pusilla* L. – Stalnik small , *Fumana procumbens* (Dun.) Gren . et Godr . – Fumana recumbent .

East Ancient Mediterranean goeement . Includes 1 species (0.6%). This *Ostrya carpinifolia* Scop. – Hopgrab ordinary .

Iranian-Turan goeement . Includes 3 species (1.7%). These are like *Ephedra procera* Fisch . et C.A. _ Mey . - Ephedra tall , *Silene chlorifolia* Smith - Green-leaved Smolevka , *Nitraria schoberi* L. (*N. caspia* Willd .) - Schober's saltpetr .

Armeno -Iranian goeement . Includes 4 species (2.2%) *Alyssum parviflorum* Fisch . ex Beeb . (*A. rothmaleri* Galushko .; *A. ca mpestre* auct .) - small-flowered beetroot , *Scabiosa micrantha* Desf . – Scabiosa small-flowered , *Scabiosa rotata* Beeb . – Scabiosa wheel-shaped , *Haplophyllum villosum* (Bieb .) G. Don fil . – Whole leaf soft-haired .

Turan goeement . There are 5 species (2.8%): *Tithymalus astrachanicus* (S.A. Mey .) Prokh . (*E. astrachanica* CA Mey . ex Prokh ., *E. praecox* (Fisch. ex Boiss .) B. Fedtsch . et Fler.) – find M Astrakhan , *Asrtagalus karakugensis* Bunge – Astrakhan Karakuginskaya , *A. lehmannianus* Bunge – A. Lemann , *R apaver o cellatum* Woronow – Mak Trapa hycana _ _ Woronow – Chilim Hycansky .

sub-mediterranean goeement . Number of species 1 (0.6%): *Polystichum aculeatum* (L.) Roth (*P. lobatum* (Huds .) Bas t .) - Multi-row small-spiked .

subcaucasian goeement . Total number of species 5 (2.8%): *Allium paradoxum* (Bieb .) G. Don fil . – Strange bow , *Silene compacta* Fisch . ex Hornem . - Smolevka crowded flower , *Sedum stoloniferum* SG Gmel . – Sedum sedum , *Arctostaphylos caucasica* Lipsch . (*A.iiva -nrsi* (L.) Spreng .) – Caucasian bearberry , *Tithymalus szovitsii* (Fisch . et C.A. Mey .) Klotzch et Garcke ex Klotzch (*E. szovitsii* Fast . et CA Mev .) – Euphorbia Schowitz .

Subpontic goeement . Includes 1 species (0.6%). These are such *Rosa tschatyrdagi* Chrshan . - Rosehip Chatyrdag .

Subturanian geoelement . Number of species 2 (1.1%): *Rindera tetraspis* Pall . – Rinder four-shielded , *Asrtagalus cornutus* Pall . – Astracanthus horn fruit .

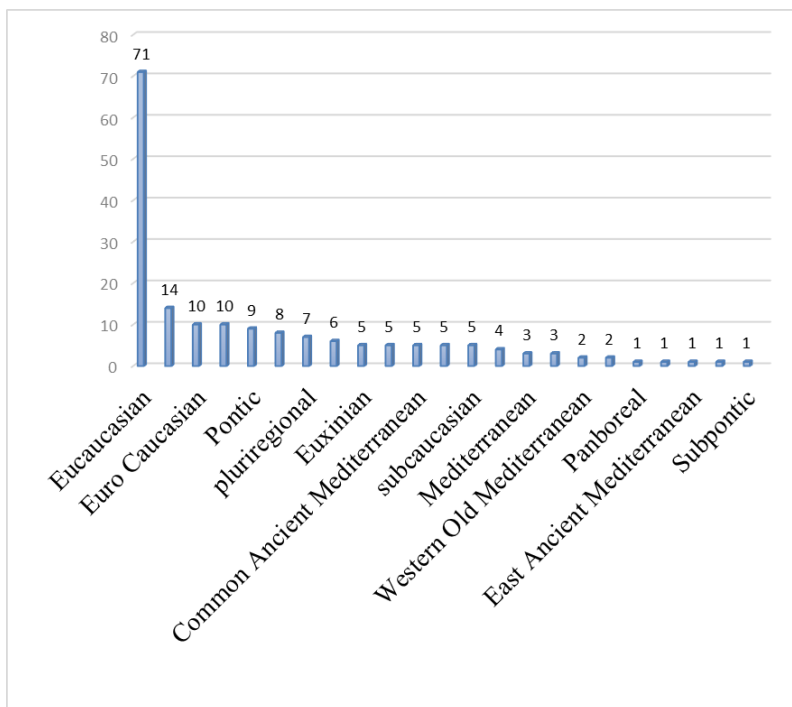


Fig. 1. Geographical spectrum of relict and endemic species of the Chechen Republic

Table 2. The ratio of groups of geoelements of species of the Chechen Republic

No.	GEOELEMENT GROUP	Number of species (295)	% participation
1	General Holarctic	21	7.1
2	boreal	136	46.1
	<i>Incl. Caucasian</i>	105	35.6
3	ancient mediterranean	24	8.1
4	Binders	9	3.1

Table 2 shows that the dominant place in the studied flora is occupied by boreal geoelements (46.1%). In second place are the ancient Mediterranean geoelements, constituting 8.1%, in third place are the general Arctic geoelements (7.1%). Binders make up 3.1% of the flora. According to the prevailing groups of geoelements, relict and endemic species of the Chechen Republic can be characterized as boreal - ancient Mediterranean-common-holarctic.

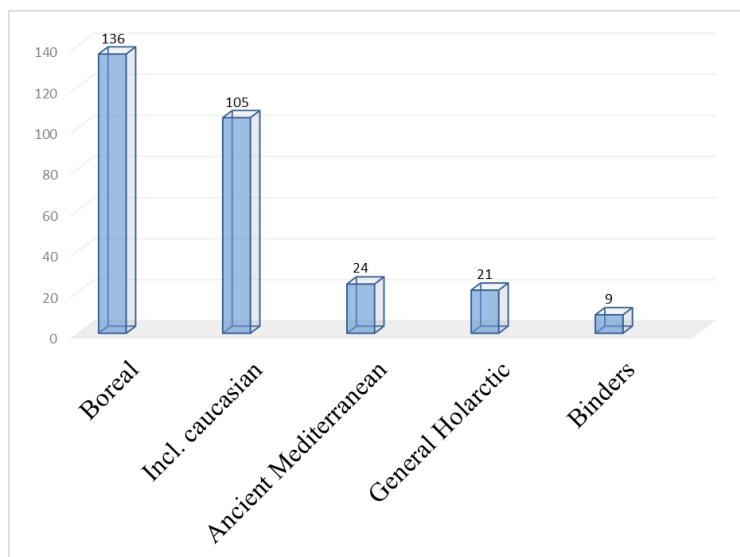


Fig. 2. Prevailing groups of geoelements of relict and endemic species of the Chechen Republic

The conservation of endemic and relict species is tantamount to the conservation of unique members of a particular phylogenetic group and its combination of potentially original characters, resulting in great phylogenetic diversity. Relic species are not necessarily the oldest in their group, and they may show the same genetic diversity as any other species. Research has often shown that relict species are at particular risk of extinction.

Preservation of the flora genetic fund, especially regional one, is extremely important (Ivanov A.L., 1998).

Stenoendemics include 7 types : *Erucastrum subnivale* Prima - Snowy jaundice , *Isatis pseudoararatica* Galushko nomennudum - false Ararat woad , *Sedum argunense* Galushko - Argun stonecrop , *Corydalis roseo - purpurea* (Rupr .) Galushko - pink-purple Corydalis, *Scutellaria raddeana* Juz . - Skullcap Radde, *Primula zeylamica* Charadze et Kapell . - Ceylam primrose , *Ranunculus tebulosica* Prima - Tebulos Buttercup .

Subendemic species include 46 species : *Allium gunibicum* Misc . ex Grossh . (*A. mirzoevii* _ Tscholokaschvili) - Gunib bow, *Gagea daghestanica* Levichev et Murtazaliev - Dagestan goose onion, *Festuca prima* E. _ Alexeev - Fescue Prima, *F. _ daghestanica* (Tzvel .) E. Alexeev - O. Dagestan, *Poa prima* Tzvel . – Bluegrass Prima, *Mandenovia komarovii* (Manden .) Alava - Mandenovia Komarov, *Symphyloloma graveolens* C. _ A. _ Mey . - Odorous herb , *Crepis hydrophiloides* Charadze - Swampy Skerda , *Jurinea Annae* sosn . - Anna's headpiece , *J. _ filicifolia* Boiss . - N. fern , *J. _ ingushetica* Galushko - N. Ingush, *J. _ absinthifolius* Galushko - N. wormwood, *Psephellus andinus* Galushko et Alieva (*C. _ Andina* (Galushko et Alieva) Czer .) - Andean Psephellus , *P. _ prokhanovii* Galushko (*C. prokhanovii* _ (Galushko) Czer .) - P. Prokhanova, *P. _ kemulariae* Charadze (*C. kemulariae* (Charadze) Czer .) –P . Kemularia , *Pulicaria dolomiticum* Galushko - Dolomite flea, *Alyssum andinum* Rupr . - Andean beetroot, *Sameraria cardiocarpa* Trautv . – Sameraria cardiac , *Campanula andina* Rupr . - Andean bell *C. _ Annae* Kolak . - K. Anna, *C. _ argunensis* Rupr . - K. argunsky , *C. _ daghestanica* Fomin - K. Dagestan, *C. _ darialica* Charadze - K. Daryalsky , *C. _ fedorovi* i Charadze - K. Fedorova, *Dianthus daghestanicus* Charadze - Dagestan carnation, *Amoria elisabethae* (Grossh .) Roskov (*T. elisabethae* Grossh .) - Amoria (Clover) Elizabeth, *Asrtagalus supinus* Bunge - Adjacent Astracanthus , *Onobrychis novopokrovskii* Vass . –

Novopokrovsky's esparcet, *Corydalis bayerniana* Rupr. – X. bayern, *Gentiana grossheimii* Doluch. – Gentian Grossheim, *Marrubium plumosum* C. A. Mey. – Shandra feathery, *Scutellaria andina* Charadze – Andean skullcap, *S. leptostegia* Juz. – Sh. finely scaly, *Primula darialica* Rupr. – Dariali primrose, *P. luteola* Rupr. – P. yellow, *Pulsatilla andina* (Rupr.) Woronow – Andean dream, *Alchemilla chlorosericea* (Buser) Juz. – Green silk cuff, *Potentilla alexenkoi* Lipsky – Potentilla Alekseenko, *P. ghalgana* Juz. (*P. oweriniana* Boiss.) – L.ingushskaya, *P. orientalis* Juz. – L. eastern, *Asperula dasyantha* Klok. – Woodruff pubescent, *Saxifraga charadzae* Otsch. – Stonebreaker Kharadze, *Scrophularia charadzae* Kem. – Nath. – Norichnik Kharadze, *S. minima* Beeb. – N. small, *Veronica bogoensis* Tumad. – Veronica of God, *V. charadzae* Kem. – Nath. – V. Kharadze, *Pseudobetckea caucasica* (Boiss.) Lincz. – Pseudo-Betkea Caucasian.

To **subeuryendemic** include 30 species: *Merendera ghalgana* Otsch. – Merendera Ingush, *iris notha* Beeb. – Kasatik (Iris) is not real, *Calamagrostis caucasica* Trin – Caucasian reedweed, *Elymus prokudinii* (Seredin) Tzvel. (*R. prokudinii* Serediri) – Prokudin's wheatgrass, *Stipa daghestanica* Grossh. – Dagestan feather grass, *Asarum ibericum* Stev. ex Ledeb. (*Asarum intermedia* (C. A. Mey.) Grossh.) – Georgian hoof, *Centaurea pseudotanaitica* Galushko nomen nudum – Lozhnodon cornflower, *Hieracium gudergomiense* Juxip – Gudergomis hawk, *Betula raddeana* Trautv. – Birch Radde, *Omphalodes rupestris* Rupr. ex Boiss. – Rocky umbilical, *Draba ossetica* (Rupr.) Somm. et Levier – Ossetian Krupka, *Matthiola daghestanica* (Conti) N. Busch – Levkoy Dagestan, *Campanula petrophilia* Rupr. – rock bell *Cerastium kasbek* Parrot – Kazbek Yaskolka, *C. multiflorum* S.A. Meu. – Multicolored sapling, *Petrocoma hoefftiana* (Fisch.) Rupr. – Petrokoma Gofft, *Medicago daghestanica* Rupr. – Alfalfa Dagestan, *Onobrychis dielsii* (Sirj.) Vass. – Diels esparcet, *Vavilovia formosa* (Stev.) Fed. – Babylovia is beautiful, *Xanthobrychis majorovii* (Grossh.) Galushko *Majorovii* Grossh. – Xanthobrychis Mayorova, *Geranium kemulariae* Charadze – Geranium Cumularia, *Hypericum asperuloides* Czern. Ex Turkish. – St. John's wort, *Nepeta biebersteiniana* (Trautv.) Pojark. – Bieberstein's catnip, *N. czegemensis* Pojark. – K. Chegemsky, *Paeonia biebersteiniana* Rupr. – Bieberstein Peony, *R. apaver bracteatum* Lindl. – Poppy bracts, *Alchemilla elisabethae* Juz. – Elizabeth's cuff, *A. dimorpha* Klok. – I. reduced, *V. daghestanica* Rupr. ex Boiss. – V. Dagestan.

Tertiary relics are 39 species: *Lycopodium annotinum* L. – One-year-old clown, *Selaginella helvetica* (L.) Spring – Swiss fly, *Ophioglossum vulgatum* L. – Ordinary cooker *Botrychium lunaria* (L.) Sw. – Lunar grove, *Polystichum aculeatum* (L.) Roth (*P. lobatum* (Huds.) Bas t.) – Multi-row small-spiked, *P. braunii* (Sperm.) Fee – M. Brown, *Asplenium ruta-muraria* L. – Kostenets wall rue, *A. septentrionale* (L.) Hoffm. – K. northern, *A. trichomanes* L. – K. hairy, *A. vtride* Huds. – K. green, *Ceterach officinarum* Willd. – Pharmacy scraper, *Phyllitis scolopendrium* (L.) Newm. – Listovnik centipede, *Polypodium vulgare* L. – common centipede, *Marsilea quadrifolia* L. – Marsilia four-leaf, *Salvinia natans* (L.) All. – Salvinia floating, *Ephedra procera* Fisch. etc. – A. Mey. – Ephedra tall, *Taxus baccata* L. – Yew berry, *Pinus sosnowskyi* Nakai (*P. hamata* (Stev.) Sosn.; *P. kochiana* Klotzsch) – Pine Sosnovsky, *Juniperus hemisphaerica* J. et C. Presl (*J. depressa* Stev.) – Hemispherical juniper, *J. blongia* Beeb. (*J. communis* L.) – M. oblong, *J. sabina* L. – M. Cossack, *Allium paradoxum* (Bieb.) G. Don fil. – Strange bow *A. ursinum* L. – L. bear (Cheremsha), *Acer laetum* C. A. Mey. – light maple *Cotinus coggygria* Scop. – Skin skumpia, *Hedera pastuchovii* Woronow – Pastukhov's Ivy, *Brunnera macrophylla* (Bieb.) Johnston. – Brunner large-leaved, *Symphyandra galushkoi* Taisumov et Teimurov. (*Campanula galushkoi* Taisumov et Teimurov.) – Zimfiandra Galushko, *S. pendula* (Bieb.) A. DC. (*Campanula pendula* Bieb.) – Z. dangling, *Oberna multifida* (Adams) Ikonn. (*S. multifida*

_ (Adams) Rohrh .) - Auburn multidissected , *Cornus mas* L. _ - Common dogwood, *Ostrya carpinifolia* scope . - common hop hornbeam, *Corylus aveliana* L. _ - common hazel, *Rhododendron caucasicum* Pall . - Caucasian rhododendron, *Arctostaphylos caucasica* Lipsch . (*A. iiva - nrsi* _ (L.) Spreng .) - Caucasian bearberry, *Pyrola rotundifolia* L. _ - Wintergreen round-leaved, *Actaea spicata* L. _ - Voronets spiky, *Helleborus caucasicus* A. _ Br . - Caucasian hellebore, *Rhodococcum vitis - idaea* (L.) Avror . (*Vaccinium vitis - idaea* L.) - Cowberry ordinary , *Viscum album* L. _ - White mistletoe .

Glacial relics are 18 species: *E. fluviatile* L. _ (*E. heleocharis* Ehrh .) - X marsh wax , *Ophioglossum vulgatum* L. _ - Ordinary cooker *Polystichum acul eatum* (L.) Roth (*P. lobatum* _ (Huds .) Bas t .) - Multirow small-spiked , *Marsilea quadrifolia* L. _ - Marsilia four-leaf, *Taxus baccata* L. _ - Yew berry, *Cypripedium calceolus* L. _ - The shoe is real, *Arctium nemorosum* Lej . - Oak burdock, *Bellis perennis* L. _ - Perennial daisy *Sedum stoloniferum* S. _ G. _ gmel . - Stonecrop shoot-bearing , *Drosera rotundifolia* L. _ - Rosyanka round-leaved, *Nymphaea alba* L. _ - White water lily *Lysimachia nummularia* L. _ - Coin loosestrife, *Anemonoides blanda* (Schottet Kotschy) Holub (*A. blanda* Schottet _ Kotschy) - *Anemonoides* is pleasant, *Helleborus caucasicus* A. _ Br . - Caucasian hellebore, *Ranunculus auricomus* L. _ - golden buttercup *Potentilla sterilis* (L.) Garcke - Barren cinquefoil, *Galium mollugo* L. _ - Bedstraw is soft, *Trapa hyrcana* Woronow - Hyrcanian Chilim .

35 species are recognized as **xerothermic relicts** : *Sternbergia colchiciflora* Waldst . et Kit . - *Sternbergia* timeless , *Muscari armeniacum* Leichtlin (*M. szo vitsianum*) _ - Armenian hyacinth hyacinth, *Imperata cylindrical* (L.) Raeusch . - *Imperata cylindrical*, *Rindera tetraspis* Pall . - *Rindera* four-sided , *Alyssum parviflorum* Fisch . ex Bieb . (*A. rothmaleri* _ Galushko ; *A. _ Campestre* auct .) - small-flowered beets, *Microthlaspi pertoliatum* (L.) F. _ K. _ May . (*Thlaspi perfoliatum* L.) - The rash is pronounced ransk .), *Dianthus arenarius* L. _ - Sand cloves, *D. _ imereticus* (Rupr .) Schischk . - G. Imeretinskaya, *Silene chlorifolia* Smith - Smolevka green leaf , *Scabiosa micrantha* Desf . - Small-flowered scabiosa, *S. _ rotate* Bieb . - S. wheel-shaped *Tithymalus astrachanicus* (S. A. Mey .) Prokh . (*E. astrachanica* CA Mey . ex Prokh ., *E. praecox* (Fisch. ex Boiss .) B. Fedtsch . et Fler.) find -M Astrakhansky , *T. glareosus* (Pall. ex Bieb .) Prokh . (*E. glaeosa* Pall. ex Bieb ., *E. maleevii* Tamamsch .) - M. Khreshchevaty , *T. szovitsii* (Fisch. et CA Mey .) Klotzch et Garcke ex Klotzch (*E. szovitsii* Fasch . et CA Mev .) - M. Shovitsa , *Asrtagalus brachylobus* Fisch. - Astrakhan korotolopastnaya , *A. cornutus* Pall. - A. _ Horned , *A. karakugensis* Bunge - A . Karakuginskaya , *A. lehmannianus* Bunge - A . Lemanna , *A. varius* SG Gmail _ (*A. virgatus* Pall.) - A. _ variety , *Caragana mollis* (Bieb .) Bess. - Karagana soft _ *Colutea orientalis* Mill - Bubble Eastern , *Melilotus wolgicus* Poir . - Devyasil Volzhsky , *Ononis pusilla* L. - Stalnik small , *Trigonella coerulescens* (Bieb .) Halacsy - Pajitnik blue , *Centaureum spicatum* (L.) Fritsch - Goldenrod grainy , *Satureja pachyphylla* C. Koch - Chaber *Stachys fugax* _ _ Pobed . - Chistets falling _ *Gonolimon besserianum* (Schult .) Kusn . - *Gonolimon* Bessera , *Nitraria schoberi* L. (*N. caspia* Willd .) - Selitryanka Shobera , *R. apaver o cellatum* Woronow - Mak Rosa tschatyrdagi _ _ Chrshan . - Shipovnik Татардагский , *Haplophyllum villosum* (Bieb .) G. Don fil. - Tselnolistnik soft hairy.

Table 3. Relic and endemic species of the Chechen Republic protected

Kinds protected	Tertiary relic	Glacial relic	Stenoende mic	subendemic	subeuryendemic	xerothermic relic
Number of species	39	18	7	46	thirty	35

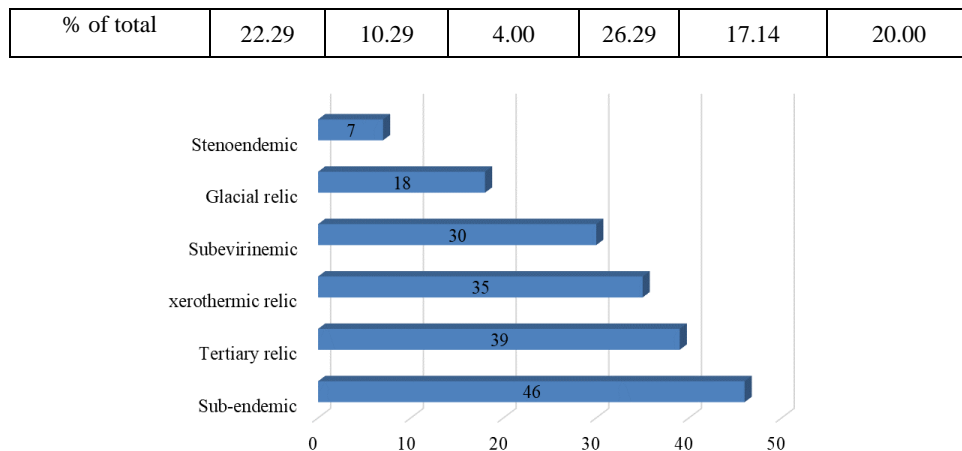


Fig. 3. Percentage distribution of species to be protected

4 Conclusions

Geographical analysis of endemic and relict plants of the Chechen Republic revealed 23 geographical elements. The dominant place in the studied flora is occupied by boreal geoelements (48.6%). In second place are the ancient Mediterranean geoelements, accounting for 8.1%, in third place - the general Arctic geoelements (7.1%). Binders make up 3.1% of the flora. According to the prevailing groups of geoelements, relict and endemic species of the Chechen Republic can be characterized as boreal - ancient Mediterranean-common-holarctic. 39 species are tertiary relicts, 18 species are glacial relicts, 35 species are xerothermic relicts, 7 species are stenoendemic, 46 species are subendemic, and 30 species are subevirinic.

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