

UDC 581.9
AGRIS F70

<https://doi.org/10.33619/2414-2948/77/05>

RARE ENDANGERED SPECIES OF THE Rosaceae FAMILY OF THE *Rosa* L. GENUS IN THE FLORA OF AZERBAIJAN

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РЕДКИЕ ИСЧЕЗАЮЩИЕ ВИДЫ СЕМЕЙСТВА Rosaceae РОДА *Rosa* L. ВО ФЛОРЕ АЗЕРБАЙДЖАНА

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Abstract. The study examined the distribution areas, status, biological characteristics, reproduction, causes of changes in natural resources, applied conservation measures of species belonging to the *Rosa* L. genus in Azerbaijan on scientific basis. The research has used the research work of many botanists and my personal research. Numerous expeditions and monitoring were carried out in the research work, 64 species of *Rosa* L. genus were found in the natural and cultural conditions in the republic. Observations have shown that the range of most species of the *Rosa* L. genus has been reduced, and some are endangered. The research analyzed the reasons for the reduction of the habitats of 33 species of 64 species of the *Rosa* L. genus, the risk criteria of these plants according to version 3.1 of the IUCN.

Аннотация. В ходе исследования на научной основе были изучены ареалы распространения, статус, биологические особенности, размножение, причины изменения природных ресурсов, применяемые меры по сохранению видов, принадлежащих к роду *Rosa* L. в Азербайджане. В исследовании использовались исследования многих ботаников и мои личные исследования. В научно-исследовательской работе проведены многочисленные экспедиции и мониторинги, в природных и культурных условиях республики обнаружено 64 вида рода *Rosa* L. Наблюдения показали, что ареал большинства видов рода *Rosa* L. сократился, а некоторые находятся под угрозой исчезновения. В исследовании проанализированы причины сокращения ареалов 33 видов из 64 видов рода *Rosa* L., критерии риска этих растений по версии 3.1 МСОП.

Keywords: Rosaceae, *Rosa* L., rare plants, endemics, Red Book, area, status.

Ключевые слова: Rosaceae, *Rosa* L., редкие растения, эндемики, Красная книга, ареал, статус.

Introduction

The study examined the systematics of rare endangered species of *Rosa* L. genus belonging to the family Rosaceae in the flora of Azerbaijan, their distribution areas, status, natural resources, biological characteristics, reproduction, causes of changes in natural resources, applied protection measures on a scientific basis.

Material and methods

In the research work Wood and Shrubs of the USSR, 1954; Flora of Azerbaijan, 1954; Trees and Shrubs of Azerbaijan, 1970; The Red Book of the USSR, 1984; [1]; Plant and Plant Formations Recommended for the Red and Green Books of Azerbaijan; Synopsis of Azerbaijani Flora, 2005; 2006; 2008; [2–4]; and so, on literature materials, our personal research was used.

Results and discussion

Numerous expeditions, business trips and as a result of research, 64 species of *Rosa* L. genus were found in the natural and cultural conditions of the country, on the basis of research, the habitats of the species were monitored and the distribution of individuals in the populations was analyzed. Observations have shown that the range of the most species of the *Rosa* L. genus is much smaller than in previous years, and that the gene pool of some is endangered. The study revealed the reasons for the reduction of the habitats of 33 species out of 64 species of the genus *Rosa* L., which were grouped on the basis of risk criteria according to version 3.1 of the IUCN. The article recommended that 33 species of the *Rosa* L. genus be included in the forthcoming Red Book.

Rosa abutalybovii Gadzh. — It grows on rocky slopes in Azerbaijan and is not soil demanding. It is recommended to be included in the Red Book as an Azerbaijan endemic.

Rosa alexeenkoi Crép. ex Juz. — It is a rare plant species in Azerbaijan, mainly distributed in Guba, Gusar regions, dry slopes, valleys, bushes. The areal is not wide.

Rosa atropatana Sosn. — It is found in Unus village of Ordubad region of Nakhchivan.

Rosa azerbaijani Novopokr. & Rzazade — It grows mainly in Kuku village of Nakhchivan, Guba, Sheki, Goy-gol, Kalbajar, on light, rocky-rocky slopes. It is an endemic plant of Azerbaijan.

Rosa brotherorum Chrshan. — very rare in nature, naturally distributed in the Guba region.

Rosa buschiana Chrshan. — It was found on the rocky slopes of Guba region of the Greater Caucasus and Nakhchivan AR.

Rosa gadzhievii Chrshan. & Iskend. — It is found in the Small Caucasus and Goy-Gol in our republic. It is recommended to be included in the Red Book of Azerbaijan as endemic plant.

Rosa glanduloso-setosa Gadzh. — It is spread around the river in Orant and Nisli villages of Lerik region.

Rosa hraczi Tamamsch. — it is found near banks of river in Hirkan, Tivi village, Ordubad region, Nakhchivan.

Rosa iljinii Chrshan. ex Gadzh. — it is found in Khizi and Cigitdag villages of Guba region, and in Gil and Piral villages of Gusar region, by rivers and meadows.

Rosa isaevii Gadzh. & Iskend. — It grows in the Lesser Caucasus, in the upper forest region, among the bushes. It is recommended to be included in the Red Book as Azerbaijan endemic plant.

Rosa jaroshenkoi Gadzh. & Iskend. — it is found in the Lesser Caucasus, in Hajikand district of Ganja city, in the hills, in Murov, in Kapaz. It is recommended to be included in the Red Book of Azerbaijan as endemic plant.

Rosa karjaginii Sosn. — it is found in Dirnis village of Ordubad region, on mountain slopes, in lower layers of mountains of our republic.

Rosa kazarjanii Sosn. — It grows in mountains, rocks and dry lands in Ordubad and Sharur districts of Nakhchivan AR. It is recommended to be included in the Red Book of Azerbaijan as endemic plant.

Rosa komarovii Sosn. — it is Naturally found in Guba-Gusar, Bala-hamza, Kalfaraj villages in Ismayilli, in Fizuli, on rocky slopes and meadows in our republic.

Rosa koslowskii Chrshan. — It is a rare plant of Azerbaijan and is found in Gazo and Durzaband areas of Lankaran.

Rosa mandenovae Gadzh. — It grows in Zagatala, Sheki region, Salavat, Shin village, Gakh region, around Akchay river, at 2300 m above sea level. It is recommended to be included in the Red Book of Azerbaijan as endemic plant.

Rosa marschalliana Sosn. — It is found in Guba, Caspian areas, Nakhchivan Autonomous Republic, Lankaran, by the side of forests, shrub forests, rocky, dry slopes.

Rosa nisami Sosn. — It is a rare plant species of Azerbaijan and is found naturally in Lerik, Dashkasan, Nakhchivan AR, Batabat. It is recommended to be included in the Red Book of Azerbaijan as endemic plant.

Rosa oxyodon Boiss. — it is found In the Greater Caucasus, it is found in bushes, riverbanks, meadows and slopes in the Guba region.

Rosa prilipkoana Sosn. — it is found in the Greater and Lesser Caucasus, in Talysh. It is recommended to be included in the Red Book of Azerbaijan as endemic plant.

Rosa pulverulenta M. Bieb. — Found in Azerbaijan, Nakhchivan, Batabat, Ordubad, Aylis village, mountains, rocky slopes.

Rosa ruprechtii Boiss. — It is a rare plant and is found in rocky cliffs and riverbanks in Dashkasan.

Table

INFORMATION ABOUT SOME OF THE SPECIES BELONGING TO GENUS *Rosa* L.

<i>The name of the species</i>	<i>General distribution</i>	<i>The distribution areas in Azerbaijan</i>	<i>Growing conditions</i>	<i>Status</i>	<i>Necessary protection measures</i>
<i>Rosa abutalybovi</i> i Gadzh.	Azerbaijan	Zagatala, mountain slopes	On rocky slopes	Endemic plant EN B2ab (I, II, III, IV, V)	It is necessary to be included in RB
<i>Rosa alexeenkoi</i> Crép. ex Juz.	Russia	Guba, Gusar (Sudur village)	On open-dry slopes, by the side of forests.	It is a rare plant NT	It is necessary to be included in RB
<i>Rosa atropatana</i> Sosn.	Turkey	Ordubad, Unus v.	Rocky slopes, sunny areas	It is a rare plant, VU D2	It is recommended to be included in RB
<i>Rosa azerbaijshanic</i> Novopokr. & Rzazade	Azerbaijan	Nakhchivan, Kuku, Guba, Sheki, Dashli borak, Goygol, Kalbajar	In bright places, on dry slopes.	Endemic plant EN B2ab (I, II, III, IV, V)	Included in RB
<i>Rosa brotherorum</i> Chrshan.	Russia	Guba, on the road to Khinalig	Rocky slopes and bushes	It is a rare plant, NT	It is recommended to be included in the Red Book
<i>Rosa buschiana</i> Chrshan.	Caucasus	Guba	On dry rocky slopes	It is a rare plant VU A2c + 3c	It is necessary to be included in RB
<i>Rosa gadzhievii</i> Chrshan. & Iskend.	Caucasus, Azerbaijan	In the Lesser Caucasus	1200 m above sea level	Endemic plant EN B2ab (I, II, III, IV, V)	It is necessary to be included in RB
<i>Rosa glanduloso-setosa</i> Gadzh.	Caucasus, Europe	Lerik district, Grand and Nisli villages, around Lankaran river	At an altitude of 1550 m mountain level	It is a rare plant NT	It is necessary to be included in RB
<i>Rosa hraciziana</i> Tamamsch.	Caucasus, Armenia	Hirkan, Nakhchivan	On rocky slopes	It is a rare plant VU A2c + 3c	It is necessary to be included in RB

<i>The name of the species</i>	<i>General distribution</i>	<i>The distribution areas in Azerbaijan</i>	<i>Growing conditions</i>	<i>Status</i>	<i>Necessary protection measures</i>
<i>Rosa iljinii</i> Chrshan. ex Gadzh.	Caucasus	Guba district, Khizi and Cigdag, Gusar district, Gil and Piral villages.	In moist, grassy lumps	It is a rare plant NT	It is necessary to be included in RB
<i>Rosa isaevii</i> Gadzh. & Iskend.	Azerbaijan	In the Lesser Caucasus	In the upper forest strips, in the bushes	Endemic plant EN B2ab (I, II, III, IV, V)	It is necessary to be included in RB
<i>Rosa jaroshenkoi</i> Gadzh. & Iskend.	Caucasus, Azerbaijan	Ganja, Haji v.	In the upper forest strips, in the bushes	Endemic plant EN B2ab (I, II, III, IV, V)	It is necessary to be included in RB
<i>Rosa karjaginii</i> Sosn.	Armenia	Nakhchivan, Ordubad, Dirnis village	In the bushes, on the slopes	It is a rare plant NT	It is necessary to be included in RB
<i>Rosa kazarjanii</i> Sosn.	Caucasus, Georgia	Nakhchivan, Ordubad, Kalaki, Pazmari	In the lower-middle mountain belts, on rocky slopes	It is a rare plant VU B1ab (III) + 2ab (III)	It is necessary to be included in RB
<i>Rosa komarovii</i> Sosn.	Russia	Guba, Gusar, Lez v., Ismayilli, Balahamza, Kalfaraj, Fuzuli	In the middle and upper mountain ranges, in forests	It is a rare plant NT	It is recommended to be included in RB
<i>Rosa koslowskii</i> Chrshan.	Russia	Lankaran, Gazo, Durzaband mountain	In forests, bushes, slopes.	It is a rare plant NT	It is necessary to be included in RB.
<i>Rosa mandenovae</i> Gadzh.	Azerbaijan, Greater Caucasus	Zagatala, Sheki, Salavat, Shin village, Gakh dist., Around the Akchay river	At an altitude of 2300 m mountain level, in the woods	Endemic plant EN B2ab (I, II, III, IV, V)	It is necessary to be included in RB
<i>Rosa marschalliana</i> Sosn.	Russia, Georgia	Guba, Khazar hunting ground, Nakhchivan, Lankaran plain	On rocky dry slopes	It is a rare plant VU D2	It is necessary to be included in RB
<i>Rosa nisamii</i> Sosn.	Caucasus	Lerik, Dashkasan, Nakhchivan	Medium mountain ranges, dry slopes	Endemic plant EN B2ab (I, II, III, IV, V)	It is necessary to be included in RB
<i>Rosa oxyodon</i> Boiss.	Georgia	Guba	By the side of forests, by the side of rivers, meadows	It is a rare plant VU D2	It is necessary to be included in RB
<i>Rosa prilipkoana</i> Sosn.	Azerbaijan, Caucasus,	Turyanchay, in Talish	In the middle mountain belt, meadows, riverbanks	Endemic plant EN B2ab (I, II, III, IV, V)	It is necessary to be included in RB
<i>Rosa pulverulenta</i> M. Bieb.	Russia, Caucasus	Nakhchivan, Lankaran	In bright, rocky, dry places	It is a rare plant VU D2	It is purposeful to be included in RB
<i>Rosa ruprechtii</i> Boiss.	Armenia	Greater Caucasus, Dashkasan	In the woods, by the side of the forest	It is a rare plant NT	It is necessary to be included in RB

<i>The name of the species</i>	<i>General distribution</i>	<i>The distribution areas in Azerbaijan</i>	<i>Growing conditions</i>	<i>Status</i>	<i>Necessary protection measures</i>
<i>Rosa sachokiana</i> Jarosch.	Caucasus, Iran	Nakhchivan, Gobustan, Taza Zarat, Garayatag and others	In the lower-middle mountain belt, on dry slopes	It is a rare plant VU D2	It is necessary to be included in RB
<i>Rosa sosnovskyana</i> Tamamsch.	Transcaucasia	Nakhchivan, Ordubad, Unus, Pazmari	In the upper mountain and subalpine meadows	It is a rare plant VU A2c + 3c	Included in RB
<i>Rosa sosnovskyi</i> Chrshan.	Armenia	Nakhchivan, Sheki, Asaghi Shabalid village, Gusar river, Chilegir village	In mountainous areas, subalpine zones, forest-river banks	It is a rare plant NT	It is necessary to be included in RB
<i>Rosa sjunikii</i> Jarosch.	Armenia (Gorus)	Ismayilli, Shekam plateau	In meadows, bushes	It is a rare plant VU A2c + 3c	It is purposeful to be included in RB
<i>Rosa subafzeliana</i> Chrshan.	Northern Hemisphere	Nakhchivan, Julfa	In temperate and warm areas	It is a rare plant NT	It is necessary to be included in RB
<i>Rosa transcaucasica</i> Manden.	Georgia	In Ismayilli, Lahij v.	On rocky slopes	It is a rare plant NT	It is necessary to be included in RB
<i>Rosa tuschetica</i> Boiss.	Caucasus	Nakhchivan, Bichenak, Nurgut	On rocky slopes	It is a rare plant VU A2c + 3c	It is necessary to be included in RB
<i>Rosa zakatalensis</i> Gadzh.	Caucasus, Azerbaijan	Zagatala, Car v., Sheki	In the lower and middle mountain ranges	Endemic plant EN B2ab (I, II, III, IV, V)	It is necessary to be included in RB
<i>Rosa zangezura</i> Jarosch.	Armenia (Gorus)	In Ordubad, Kotan, Dashkasan and Jabrayil	In the lower-middle mountain range	It is a rare plant NT	It is necessary to be included in RB
<i>Rosa zuvandica</i> Gadzh.	Azerbaijan	Zuvand, Gosmalyan and Tatoni, Ayvari and Nisli villages	At an altitude of 1650 m above sea level, on dry slopes, hills	Endemic plant EN B2ab (I, II, III, IV, V)	It is necessary to be included in RB

Rosa sachokiana Jarosch. — It is found on rocky slopes in Nakhchivan and Karabakh.

Rosa sosnovskyana Tamamsch. — It is found in Ordubad, Sharur, meadows and bushes in Nakhchivan.

Rosa sosnovskyi Chrshan. — In Azerbaijan, it was found naturally by the side of forest, hawthorn forest of Sheki (Ashagi Shabalid village), Guba, Gusar (Gusar river, Chilegir village) regions.

Rosa sjunikii Jarosch. — It is found in bushes in the territory of Shekam plateau in Ismayilli region of Azerbaijan.

Rosa subafzeliana Chrshan. — It is found in the foothills of Julfa region of Nakhchivan

Rosa transcaucasica Manden. — it is found in Lahij, Ismayilli region.

Rosa tuschetica Boiss. — It is found in the rocky areas of Bichenak and Nurgut villages in Nakhchivan in Azerbaijan.

Rosa zakatalensis Gadzh. — it grows in the village of Chay in Zagatala, in Balakend, on the roadsides in Sheki, in sunny areas.

Rosa zangezura Jarosch. — it is found in Nakhchivan, Dashkasan, Jabrayil in the lower and middle mountain belts, on the banks of rivers.

Rosa zuvandica Gadzh. — distribution areal is 1.5 km east of Zuvand, Gosmalyan and Tatoni villages of the Talysh zone of Azerbaijan, around the villages of Ayvari and Nisli. It is recommended to be included in the Red Book of Azerbaijan as endemic plant.

At the same time, research is underway on the general distribution of the above species of the genus *Rosa* L., their distribution in Azerbaijan, status, natural resources, biological characteristics, reasons for changes in natural resources, necessary conservation measures. (In addition, the general distribution of the above species belonging to the genus of hips, their distribution in Azerbaijan, status, natural resources, biological characteristics, causes of changes in natural resources, necessary conservation measures have been studied on a scientific basis.)

The book [3] provides information on 189 species of rare and endangered trees and shrubs belonging to 42 families and 71 genera that are naturally distributed in the flora of the country. 22 species of genus *Rosa* L. are included in this book. As a result of my research, it was determined that 11 new species of the genus *Rosa* L., with a small distribution areal, because of the reasons for exposure to anthropogenic factors and lack of special protection, are very rare in nature. In order to carry out the necessary protection measures in the studied species, it is recommended to include 11 new species in the List of Endangered Plants and in the [1]. At the same time, since the distribution area of 7 out of 33 species was first discovered by Azerbaijani botanists and they are not found in any flora of the world, it is recommended to accept them as endemic plant species of Azerbaijan.

Conclusion

As a result of my research, it was revealed that 22 species of the genus *Rosa* L. were included in the book [3]. It is known that 11 new species of the genus *Rose* L., which have a small areal and are exposed to anthropogenic factors, are very rare in nature due to their lack of special protection. Out of 33 studied species, 10 new species were accepted as endemic plants of Azerbaijan. 3 types of them (*Rosa azerbaijandica* Novopokr. & Rzazade, *Rosa nisamii* Sosn., *Rosa zakatalensis* Gadzh.) are included in [1], 7 species (*Rosa abutalybovii* Gadzh., *Rosa gadzhievii* Chrshan. & Iskend., *Rosa isaevii* Gadzh. & Iskend., *Rosa jaroshenkoi* Gadzh. & Iskand., *Rosa mandenovae* Gadzh., *Rosa prilipkoana* Sosn., *Rosa zuvandica* Gadzh.) are recommended to be included.

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*Работа поступила
в редакцию 19.03.2022 г.*

*Принята к публикации
25.03.2022 г.*

Ссылка для цитирования:

Mammadov T., Abbaszade Z. Rare Endangered Species of the *Rosaceae* Family of the *Rosa* L. Genus in the Flora of Azerbaijan // Бюллетень науки и практики. 2022. Т. 8. №4. С. 51-57. <https://doi.org/10.33619/2414-2948/77/05>

Cite as (APA):

Mammadov, T., & Abbaszade, Z. (2022). Rare Endangered Species of the *Rosaceae* Family of the *Rosa* L. Genus in the Flora of Azerbaijan. *Bulletin of Science and Practice*, 8(4), 51-57. <https://doi.org/10.33619/2414-2948/77/05>