

CURRENT STATUS OF ASTRAGALUS SPECIES INCLUDED IN THE RED BOOK OF THE DARELEYEZ RANGE

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Abstract

Plants belonging to the Fabaceae lindl. family are widely distributed in nature and human life, distinguished by their important properties. Plants of the Fabaceae lindl. family live in very diverse landscapes, including various life forms and ecological groups, which is of exceptional importance in the formation of biocenosis. It is known that there are more than 18,000 species belonging to more than 650 genera. There are 502 species belonging to 69 genera in Azerbaijan, and 258 species belonging to 46 genera in the Nakhchivan Autonomous Republic, many of which are cultivated.

Among the *astragalus* species included in the family, *Astragalus szovitsii*, *Astragalus caraganae*, *Astragalus echinops*, *Astragalus fabaceus*, *Astragalus montis-aquilis grossh.*, *Astragalus wagneri*, *Astragalus aznabjurticus grossh.* It was discovered in the territory of the Daralayaz range. The low population of these species, the negative impact of zoogenic and anthropogenic factors have reduced their natural reserves. Since they are included in the Red Book of Azerbaijan and the Nakhchivan Autonomous Republic, conservation measures have been developed for their protection, efficient and sustainable use. As a species whose range is gradually shrinking, whose biology is poorly studied, and whose populations are close to danger, the protection of their populations in the main places where they grow in the territory of the Arpachay State Nature Reserve should be strengthened, and their biological characteristics should be studied.

Keywords: *Astragalus szovitsii*, *Astragalus caraganae*, *Astragalus echinops*, *Astragalus fabaceus*, *Astragalus montis-aquilis grossh.*, *Astragalus wagneri*, *Astragalus aznabjurticus grossh.*

Plants belonging to the Fabaceae lindl. family are widely distributed in nature and human life, distinguished by their important properties. Plants of the Fabaceae lindl. family live in very diverse landscapes, including various life forms and ecological groups, which is of exceptional importance in the formation of biocenosis. It is known that there are more than 18,000 species belonging to more than 650 genera. There are 502 species belonging to 69 genera in Azerbaijan, and 258 species belonging to 46 genera in the Nakhchivan Autonomous Republic, many of which are cultivated. Among the *astragalus* species included in the family, *Astragalus szovitsii*, *Astragalus caraganae*, *Astragalus echinops*, *Astragalus fabaceus*, *Astragalus montis-aquilis grossh.*, *Astragalus wagneri*, *Astragalus aznabjurticus grossh.* It was discovered in the territory of the Daralayaz range. [Table 1.].

Astragalus szovitsii **Vulnerable** - VU C2a(i) status. In Azerbaijan, it is distributed only in the Nakhchivan Autonomous Republic. It is found singly in the foothills of the Garagush mountain in the Sharur region, in the villages of Chalkhangala in the Kangarli region, Arafsa in the Julfa region, and Bilev and Behrud in the Ordubad region. It was described based on materials collected from the Nakhchivanchay region. It grows on gravelly, clayey, dry stony - rocky and grassy slopes of the lower and middle mountain belt. Since it is distributed in limited areas, its natural reserves are small. It reproduces by seeds [2,3].

It is a perennial plant, the base of the stem is woody, its height reaches 10-25 cm. Its leaves are 8-25 pairs, 6-15 cm long, densely silvery pubescent. The free part of the leaf sheath is lanceolate, up to one cm long, the peduncle is longer than the leaf, 8-25 cm long, densely white-hairy and shiny. The inflorescence is

very small, scaly. The calyx is swollen spherical, reticulate, the lower part is cream-colored, the upper part is pink, 12-24 mm long, the ovary is located on a short stalk, white-hairy. The pistil is naked. The pod is membranous and one-seeded. It flowers in May-June and its fruits ripen in August. It is an ornamental and fodder plant. It is a xerophyte. It belongs to the Caucasus geographical area type [6].

Due to the small number of its populations and the negative impact of anthropogenic factors, its natural reserves have decreased. Since it is included in the Red Book of the Nakhchivan Autonomous Republic, special measures have been developed for its protection, efficient and sustainable use. As a sensitive species that is distributed in limited areas and is subject to negative impacts, its areas of distribution in the Arpachay and Orbudad State Nature Reserves should be put under special control and its natural populations should be protected.

Astragalus caraganae **Critically Endangered** - CR B1ac(i) status. In Azerbaijan, it is found only in the middle mountain belt of the Nakhchivan Autonomous Republic, on dry rocky slopes, in the Badamli, Kuku, Garababa villages and Kecheldagh area of the Shahbuz region. It was described based on materials collected from the Garababa village of the Shahbuz region in the Nakhchivan Autonomous Republic. It grows on dry rocky slopes and rocky areas. Since it is distributed in limited areas, it has no natural reserves. It reproduces by seeds.

It is a perennial plant with numerous erect stems, 20-50 cm tall. The leaf sheath is linear, furrowed, white-hairy and white-ciliated, sometimes black-hairy at the base. The leaflets are 16-27 pairs in number, oblong-ovate, 3-11 mm long and 2-4 mm wide, glabrous

on the upper side, densely velvety hairy on the lower side. The inflorescence is linear, umbellate, white or black-ciliated, and longer than the flower stalk. The raceme is short, 3-5 cm long and sparsely flowered with 4-6 flowers. The corolla is yellow, the sail is 22-24 mm long, the plate is round, 12-15 mm wide, the upper side is weakly pubescent or not. The ovary is oblong, pubescent, and stalked. Its pod is approximately 2 cm long, 5 mm wide, straight, sparsely hairy, with a nose and two-lobed. It blooms in May, and its fruits ripen in June - July. It is an ornamental plant. It is xerophytic. It is endemic. It is included in the Atropatan geographical area type.

Its natural resources have decreased due to the small size of its population and the negative impact of ecological and anthropogenic factors. It has been included in the Red Book of Azerbaijan and the Nakhchivan Autonomous Republic for its protection, efficient and sustainable use. As a species whose condition in nature has reached a critical point and is likely to become extinct, its areas of distribution in the Zangezur National Park and Arpachay State Nature Reserve should be put under special control and its natural populations should be protected.

Astragalus echinops Vulnerable - VU B1a+2a status. Distributed in Azerbaijan only in the Nakhchivan Autonomous Republic. It is found singly at the foot of Mount Garagush in Sharur district, in the villages of Chalkhangala in Kangarli district, Arafsa in Julfa district, and Bilev and Behrud in Ordubad district. Described based on materials collected from around Nakhchivanchay. It grows on gravelly, clayey, dry stony - rocky and grassy slopes of the lower and middle mountain belt. Since it is distributed in limited areas, its natural reserves are small. It reproduces by seeds.

It is a perennial plant, the base of the stem is woody, its height reaches 10-25 cm. Its leaves are 8-25 pairs, 6-15 cm long, densely silvery pubescent. The free part of the leaf sheath is lanceolate, up to one cm long, the peduncle is longer than the leaf, 8-25 cm long, densely white-hairy and shiny. The inflorescence is very small, scaly. The calyx is swollen spherical, reticulate, the lower part is cream-colored, the upper part is pink, 12-24 mm long, the ovary is located on a short stalk, white-hairy. The pistil is naked. The pod is membrane-shaped and single-seeded. It blooms in May-June and its fruits ripen in August. It is an ornamental and fodder plant. It is xerophytic. It belongs to the Caucasus geographical area type.

Due to the small number of populations and the negative impact of anthropogenic factors, its natural reserves have decreased. Since it is included in the Red Book of the Nakhchivan Autonomous Republic, special measures have been taken for its protection, efficient and sustainable use. As a sensitive species that is distributed in limited areas and subject to negative impacts, the areas where it is distributed in the Arpachay and Orubad State Nature Reserves should be put under special control and its natural populations should be protected.

Astragalus fabaceus Vulnerable - VU D2 status. In Azerbaijan, it is distributed only in the Nakhchivan Autonomous Republic. It is distributed in the foothills of the Garagush mountain in the Sharur region, in the

villages of Kulus, Shahbuzkend and Selesuz in the Shahbuz region, in the village of Gazanchi in the Julfa region, in the vicinity of the village of Daridagh and in the village of Mazra in the Ordubad region. It grows on gravelly, clayey, dry stony - rocky, grassy and clayey slopes of the lower and middle mountain belts. Since it is distributed in limited areas, its natural reserves are low. It reproduces by seeds [8].

It is a stemless perennial plant 8-20 cm high. The leaf axils are whitish, the edges are long-ciliated, the lower part is mixed with tassels. The leaves are 5-25 cm long, oval or ovate, consisting of 4-10 pairs, glabrous on the upper side, and softly hairy on the lower side. The stamens are tightly attached to the corolla, usually 2-3 times shorter than the leaves and have 3-7 flowers. The petals are narrowly lanceolate, with white swollen long hairs. The calyx is tubular, toothed, usually 3 times shorter than the tube. The pistil is greenish yellow, the surface is oblong with a slightly protruding upper part. The stamens are sessile, both ends are sharp. It is dioecious. Flowering and fruiting occur in April-May.

Due to the small number of populations, the negative impact of anthropogenic and climatic factors, its natural reserve has changed. Since it is included in the Red Book of Azerbaijan, special measures have been taken for its protection, efficient and sustainable use. As a sensitive species that is distributed in limited areas and subject to negative impacts, its areas of distribution in the Arpachay and Orubad State Nature Reserves should be put under special control and its natural populations should be protected. It is recommended to constantly monitor the place of occurrence and populations of the species. The species is included in the Red Book of Azerbaijan.

Astragalus montis-aquilis grossh. CR B2c(ii,iv) status. In the Nakhchivan Autonomous Republic, it is distributed in the areas of Garagush Mountain in Sharur district, Chalkhangala village in Kangarli district, Emin Bulagi and Kechaldagh in Shahbuz district and Kotam Mountain in Ordubad district. It grows on dry stony and gravelly slopes of the middle and high mountainous zone. Since it is distributed in limited areas, its natural resources are low. It reproduces by seeds

It is a small perennial plant. It is greenish-blue in color from top to bottom and densely hairy. Its leaves are 5-8 cm long, consist of 5-9 pairs, and are ovate. The upper part is sparse, and the lower part is densely thickly hairy. The corolla is usually equal to the leaves and the brush is 3-7-flowered. The petals are lanceolate and 2 times shorter than the flower stem. The calyx is 10-11 mm long, with dark brown hairs, the teeth are lanceolate and 4-7 times shorter than the tube. The pistil is 15 mm long, whitish, reddish-purple at the top, boat-shaped. The stamens are 18-22 mm long, cylindrical. Flowering and fruiting occur in May-June.

The low number of populations is due to the negative impact of anthropogenic and climatic factors. Since it is included in the Red Book of Azerbaijan, special measures have been developed for its protection, efficient and sustainable use [6, p.287]. As a species with a gradually shrinking range, poorly studied biology, and near-threatened, protection work in the Arpachay State Nature Reserve should be strengthened.

Astragalus wagneri. Near Threatened – NT status. Distributed in the foothills of Mount Garagush in Kangarli district, Yukhari Buzgov village in Babek district, and Palangli valley. Grows on dry limestone slopes and rocky areas in the middle mountain belt. Since it is distributed in a limited area, it has no natural reserves. It reproduces by seeds.

Its height is 5-15 cm, the free part of the leaf blades is lanceolate or linear, the edges are ciliate. Its leaves are 8-10 pairs, gray hairy, the leaflets are obovate or elliptical, blunt. The flower group is 2-5-flowered. The corolla is pink, later turning red. Its petals are 5-8 cm long, egg-shaped, black-spotted. The calyx is 15-18 mm long, ovate, linear-toothed. The pistil is 22 mm long, pink, later reddish. Its wings are equal to the female's, and the scutellum is shorter than it. It blooms in May, and its fruits ripen in June and July.

The small population, the negative impact of ecological and anthropogenic factors have led to the change of its natural resource. It is included in the Red Book of Azerbaijan and the Nakhchivan Autonomous Republic for its protection, efficient and sustainable use. As a sensitive species that is distributed in limited areas or areas, and is subject to negative impacts, its areas of distribution in the Arpachay State Nature Reserve should be put under special control and its natural populations should be protected.

Astragalus aznabjurticus grossh. EN B1ab(i,ii,iii)+2ab(ii,iii,v) status. Distributed in the Babak region of the Nakhchivan Autonomous Republic,

in the areas of Yukhari Buzgov and Chalkhangala villages, and Gurudera. Found on dry, gravelly and stony slopes of the lower and middle mountainous belt. Since it is distributed in limited areas, its natural resources are low. It reproduces by seeds.

It is a perennial plant with long creeping stems without stems, slightly drooping thin branches. The leaf blade is sessile, the tassel is white hairy. The leaves are 5-10 cm long, elliptical or long oval, consisting of 9-12 pairs, the upper one is slightly protruding, and the edges are short-ciliated. The corolla is equal to or shorter than the leaves, hairy. The petals are 7-10 mm long, lanceolate, white and black hairy. The calyx is tubular with white and black hairs, relatively short. The stamen is up to 25 mm long, yellowish, the upper part is white hairy. Flowering and fruiting occur in May-June.

Its natural reserves have decreased due to the small population and the negative impact of zoogenic and anthropogenic factors. Since it is included in the Red Book of Azerbaijan, conservation measures have been developed for its protection, efficient and sustainable use [6, p.277]. As a species whose range is gradually shrinking, whose biology is poorly studied, and whose populations are close to being endangered, the protection of its populations in the main places where it grows in the territory of the Arpachay State Nature Reserve should be strengthened, and its biological characteristics should be studied.

Table 1.

Sıra №	Species	Nakh. RB (2010)	Az. RB (2023)
1.	<i>Astragalus szovitsii</i> - Soviç paxladəni	VU C2a(i)	VU A2c+3c
2.	<i>Astragalus caraganae</i> - Xöstəkvəri paxladən	CR B1ac(i)	CR B1ab (i,ii, ii)c(i) +2 ab(i, ii, iii)c(i)
3.	<i>Astragalus echinops</i> - Toppuztikan paxladən	VUC2a(i)	VU B1a+2a
4.	<i>Astragalus fabaceus</i> - Paxlavəri paxladən	--	VU D2
5.	<i>Astragalus montis-aquilis</i> - Dağ qaraquşu paxladəni	--	CR B2c(ii,iv)
6.	<i>Astragalus wagneri</i> - Qaraquş gəvəni	--	NT
7.	<i>Astragalus aznabjurticus</i> Grossh. - Əznəbürd paxladəni (gəvəni)	--	EN B1ab (i,ii,iii)+2ab (ii,iii,v)

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