

# A Taxonomic Revision and Distribution of the Genus *Juniperus* (Cupressaceae) in Azerbaijan

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**Abstract:** In order to prevent a decline in its area, mostly caused by problems in natural regeneration, the present study was carried out to revise the list of *Juniperus* species in wild flora of Azerbaijan Republic. The presented article is devoted to taxonomic revision of *Juniperus* L. species widely distributed in Azerbaijan. A simplified key for identification species from wild flora and the distribution map for *Juniperus* species have been compiled for the area.

**Key words:** *Junipers*, Azerbaijan, taxonomy, species.

## 1. Introduction

Nowadays the habitat fragmentation and low point regeneration are principal reasons of conservation of *Juniperus* L. populations in Azerbaijan. At present, the use of plant species which are less demanding for soil and environmental factors in the ecological crisis of the Absheron peninsula is very relevant. The main aim of article is to revise different taxa distributed in the area of Azerbaijan Republic, to renovate the distribution map that demonstrates the modern status of these species in area and to provide dichotomous key for *Juniperus* species identification.

## 2. Materials and Methods

Most of plant specimens were collected from September to May 2016-2017 from natural populations in southern, northern and central parts of Azerbaijan Republic. Leaves and cones were collected from individuals in their natural habitats. Herbarium dried specimens from Herbarium laboratory of ANAS (Azerbaijan National Academy of Science) were used for identification. Plant names are from *Flora of*

*Azerbaijan* [1], with changes according to Euro+Med PlantBase—the information resource for Euro-Mediterranean plant diversity [2]. The map was composed of literature information [3-6], as well as the results of the scientific expeditions to the area. The simplified key was composed by using botanical description suggested by Adams [7].

## 3. Results

In this paper the presence of 5 species of *Juniperus* L. in the wild flora of Azerbaijan Republic has been recognized. According to identification and observation researches we have developed the distribution map of *Juniperus* species with new data that have not been mentioned before.

As stated by Euro-Med PlantBase *Juniperus communis* spp. are not distributed in Azerbaijan but we have observed and identified this subspecies in this region. The locations of these samples have been recorded and these coordinates are included in distribution map.

*Juniperus pygmaea* was maintained as species apart in *Flora of Azerbaijan* but we have used the modern status of this species according to Adams et al. [8] and indicated this difference in distribution map (Fig 1).

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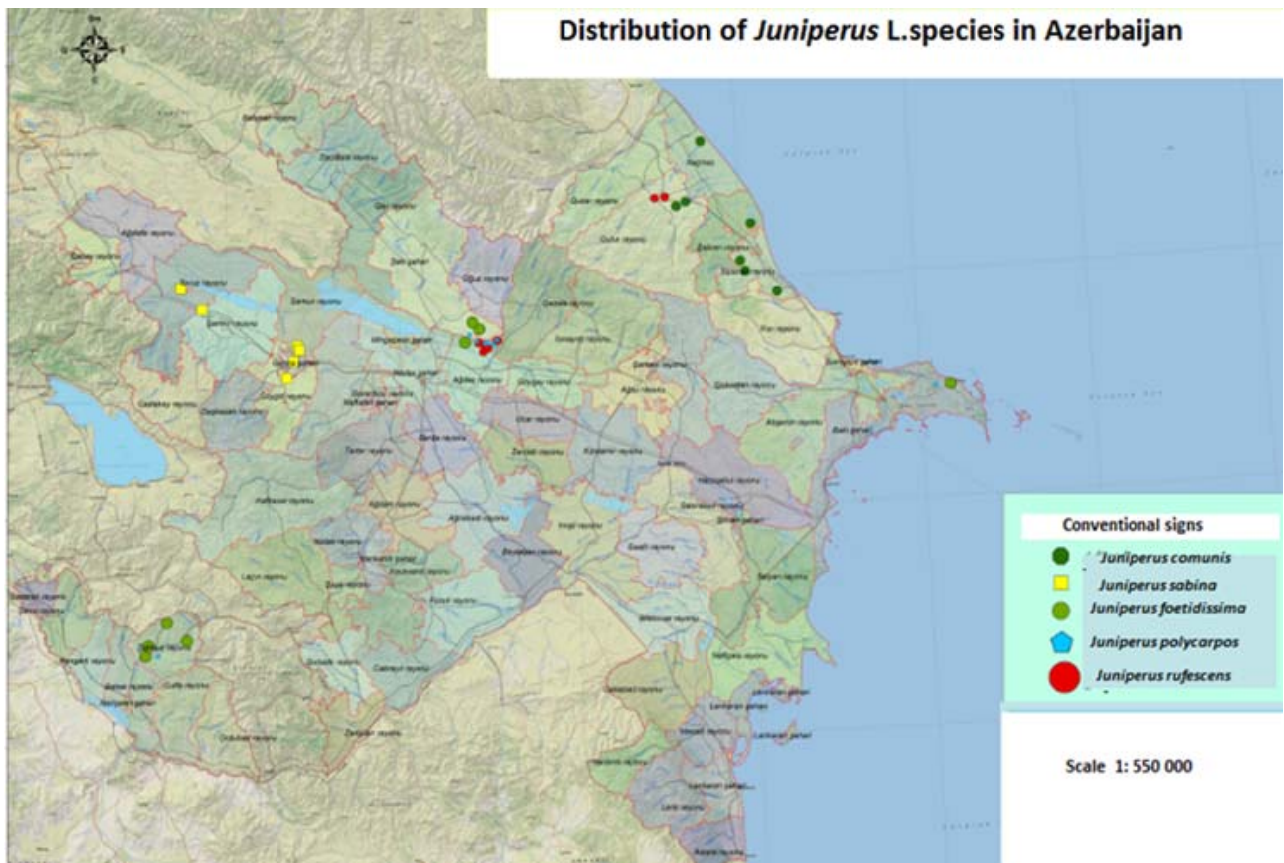
**4. Synopsis of the Genus *Juniperus* L. in Azerbaijan**

Evergreen, trees or low spreading shrubs are mainly

monoecious, with scale or needle-like leaves. The female cones are very characteristic, berry-like with hard shelled seeds. Their seeds require one to three years to develop.

**5. Identification Key to Azerbaijanian Species of the Genus *Juniperus***

- 1a. All leaves acicular (jointed at the base).....2
- 1b. Leaves decurrent (not subulate, not joined at the base), both scale like and whip leaves, only whip leaves on juvenile plants, leaves in pairs or whorls of 3, cones borne terminal.....*J. sabina*
- 1c. Leaves are only scalelike.....3
- 2a. Cones 6-15 mm, blue to bluish-black when mature (2-3 years) seeds free, male cones solitary, leaves with one broad stomatiferous band above.....*J. communis*
- 2b. All leaves are acicular, 12-20 mm, cones are red or red-brown when mature.....*J. rufescens*
- 3a. Ultimate branchlets 1-1.3 mm diameter, scale leaves coarse, 1.2-1.16 mm long, seed cones 8-14 mm and globose.....*J. polycarpus*
- 3b. The width of the scale-like leaves is 2-10 mm and has unpleasant smell, cones are brown-red.....*J. foetidissima*



**Fig. 1** Distribution map of *Juniperus* L. species in wild flora of Azerbaijan.

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