Ecogeographic study and conservation status of the endemic Oncocyclus Irises (Iridaceae) of Lebanon

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Objectives

The present project aims at updating the distribution of endemic Oncocyclus irises of Lebanon, describing their habitat and associated flora in order to develop appropriate conservation strategies.

Iris sect. Oncocyclus (Siemss.) Baker

Oncocyclus irises are xerophytic species occurring from central Turkey to the Caucasus, south to the Sinai peninsula and east to the Kopet Dag mountains in north eastern Iran.

Botanically, they are defined as rhizomatous bearded irises with arillated seeds and only one flower per stem.

Very little is known about the ecology of this section.

Lebanese Oncocyclus Irises

Oncocyclus irises in Lebanon are represented by four endemic taxa distributed along the Mount Lebanon mountain chain between 1300 m and 2000 m.

They are subject to many threats linked to anthropogenic activities: urbanization (mainly due to tourism development), quarrying and grazing.

<table>
<thead>
<tr>
<th>Taxon</th>
<th>IUCN status</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. cedrensis Dinsmore ex Chaudary</td>
<td>Endangered</td>
</tr>
<tr>
<td>I. sofarana Foster</td>
<td>Endangered</td>
</tr>
<tr>
<td>I. sofarana subsp. kesruwana Dinsmore ex Chaudary</td>
<td>No data</td>
</tr>
<tr>
<td>I. westii Dinsmore</td>
<td>Extinct</td>
</tr>
</tbody>
</table>

IUCN status of Lebanese endemic Oncocyclus

Ecogeographic survey

Historical locations and status after search in the field.

PC: Presence confirmed
NF: Not found
NV: Not visited

Four out of ten visited populations have disappeared mainly due to a loss of habitat caused by urbanization.

Flora characterization

The flora associated to the iris populations was collected during the spring 2002. A total of 161 species in flower were recorded during the collection period.

Population demography

Population demography was followed in three populations representing three different taxa. Parameters such as density, proportion of different life stages, flowering rate, fruit and seed set were recorded in 2002 and 2003 using 1m x 1m quadrats placed along 20 m permanent transects.

References


Update of the current distribution

The historical distribution of the populations was determined based on literature, passport data associated to herbarium specimens as well as contacts with naturalists. These locations were checked in the field during the springs 2002 and 2003.

Distribution of Oncocyclus Irises (Rix, 1997)

Habitat characterization

The habitats of the six remaining populations have been described. Parameters such as geographical position, slope, exposure and soil type have been recorded for each « sub-site » (defined as an homogeneous area based on vegetation and soil) for all populations.

Habitat preferences allow good drainage:

- south / south-west exposure
- Rocky slopes (up to 45°)
- Ferric rust soil on a karstic substratum

Identified pressures on populations habitat

Urbanization (occurrence on all sites) causes habitat loss

Grazing (occurrence on all sites) has an impact on the reproductive success of the plant as the fruit (capsule) is being eaten at the milking stage

Agriculture (33% occurrence) causes habitat loss even if a shallow ploughing is applied

Quarrying (17% occurrence) causes habitat loss

Four out of ten visited populations have disappeared mainly due to a loss of habitat caused by urbanization.

Vegetation similarity groupings are based on the altitude, which determines the vegetation stages (transitions at 1500 m and 1800 m)

14% of the collected flora are endemic species, which gives a high conservation value to the site

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References