
ASSESSMENT 4

Carex cretica

TAXONOMY

Kingdom	Phylum	Class	Order	Family
PLANTAE	TRACHEOPHYTA	LILIOPSIDA	CYPERALES	CYPERACEAE

Scientific Name: *Carex cretica*

Species Authority: Gradst. & J. Kern

Common Name/s: Crete Sedge [*English*]
Laïche de Crète [*French*]

Synonyms:

Taxonomic Notes: Traditionally this species was considered most closely related to *Carex distans* and *C. punctata*, and was placed in the group Spirotachyae. Recent molecular-systemic work by Escudero *et al.* (2008) however showed that *C. cretica* does not belong in that group and has other phylogenetic affinities.

ASSESSMENT INFORMATION

Red List Category & Criteria: NT

Justification: *Carex cretica* is a small-range Greek endemic, occurring in wetland habitats. These habitats are declining due to water extraction and agricultural pollution. Its area of occupancy is below 500 km², but the species has been recorded in 19 sites and probably occurs in more. It is not known how this translates into number of locations as defined by the IUCN Red List Categories and Criteria, but it is presumed that there are more than 10 locations as the threats to this plant are locally confined. The species is therefore assessed as Near Threatened.

GEOGRAPHIC RANGE

Range Description: *Carex cretica* is an endemic to Greece, found in western Crete and one site in Ikaria. Its area of occupancy is estimated to be below 500 km².

Countries **Native:**
Greece (East Aegean Islands, Kriti)

POPULATION

Population: The species has been recorded from 18 sites in Crete and one site in Ikaria (Bergmeier and Abrahamczyk 2007). Population trend is unknown at present, but it is suspected that the population is declining because of declining habitat.

Population Trend: Unknown

HABITAT & ECOLOGY

Habitat & Ecology: *Carex cretica* is a small, tufted perennial sedge. It mainly grows in submontane, riparian *Platanus orientalis* woodland; on steep banks of permanent streams (*Adiantum capilli-veneris* communities); springs; and seepage meadows (*Brachypodium-Holoschoenion* communities). It is

occasionally found in damp *Castanea* groves.

The morphology of this plant can vary depending on grazing impact. In the absence of grazing, it can grow to more than 40 cm in height. When subjected to sheep grazing, the plants are found to be much smaller, but they still produce flowers and fruits (Bergmeier and Abrahamczyk 2007).

Systems: Terrestrial, Freshwater

Habitat codes:

- 1.4 Forest – Temperate
- 5.1 Wetlands (inland) – Permanent rivers/streams/creeks (includes waterfalls)
- 5.9 Wetlands (inland) – Freshwater springs and oases

USE & TRADE

Use & Trade: This species is not utilized.

THREATS

Major Threats: Small-scale wetlands in Crete are threatened by water extraction for crop irrigation purposes. This changes the hydrology of water bodies and mostly results in them drying out. Another threat is the application of herbicides and fertilizers on nearby olive plantations (Bergmeier and Abrahamczyk 2007).

Threat codes:

- 7.2.3 Natural system modifications – Dams & water management/use – Abstraction of surface water (agricultural use)
- 9.3.3 Pollution – Agricultural & forestry effluents – Herbicides & pesticides

CONSERVATION ACTIONS

Conservation Actions: This species is found in two habitat types that are listed in Annex I of the EU Habitats Directive 92/43/EEC: Mediterranean tall-herb and rush meadows (6420); and *Platanus orientalis* and *Liquidambar oreintalis* woods (92C0). Most of the wetlands with *Carex cretica* are included in the Greek Natura 2000 sites GR4340004 (Elos-Tropolia) and 4340006 (Fassas-Limni Agias), but the threats still remain within these protected sites. Raising awareness of the public and administration bodies is therefore needed. It is furthermore requested to implement water protection areas and to provide legal and factual means to control water extraction (Bergmeier and Abrahamczyk 2007). The species is protected by Greek Law (Presidential Decree 67/1981).

Research Action codes:

Conservation Needed codes:

- 1.2 Land/water protection – Resource & habitat protection
- 4.3 Education & awareness – Awareness & communication
- 5.4.2 Law & policy – Compliance and enforcement – National level

BIBLIOGRAPHY

- Bergmeier, E. and Abrahamczyk, S. 2007. Ecology and distribution of the Aegean wetland endemics *Carex cretica* and *Lathyrus neurolobus*. *Nova Hedwigia* 131: 207-219.
- Escudero, M., Valcárcel, V., Vargas, P. And Luceno, M. 2008. Evolution in *Carex* L. sect. Spirostachyae (Cyperaceae): A molecular and cytogenetic approach. *Organisms, Diversity and Evolution* 7: 271-291.
- Gradstein, S.R. and Kern, J.H. 1968. A new *Carex* from Crete. *Acta Botanica Neerlandica* 17: 242-247.
- Tutin, T.G., Heywood, V.H., Burges, N.A., Valentine, D.H., Walters, S.M. and Webb, D.A. (eds) 1964-1980. 5 volumes. *Flora Europaea*. Cambridge University Press, Cambridge, UK.

ASSESSMENT 4: REVIEW

Evaluate the suitability of this assessment for publication on the Red List. Please place a cross (X) in the appropriate box and provide reasons for your decision

<p>Accept</p> <p>Accept without edits <input type="checkbox"/></p> <p>Minor edits needed <input type="checkbox"/></p> <p><i>For example, assessment seems appropriate, but some documentation issues to be clarified or fixed</i></p>	<p>Reject</p> <p>Return assessment to the assessor(s) <input type="checkbox"/></p> <p><i>For example, incorrect or missing criteria; documentation insufficient to determine validity of the assessment.</i></p>
<p>Please provide a summary of edits needed:</p>	<p>Please provide reasons for rejecting the assessment:</p>
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