

New localities of the vulnerable species *Eriolobus trilobatus* (Rosaceae) in northeastern Greece

Giorgos Korakis, Kostas Poirazidis, Nikolaos Papamattheakis &
Aristotelis Papageorgiou

Department of Forestry, Environment and Natural Resources,
Democritus University of Thrace, P.O. Box 129, Pantazidou 193, 68200, Orestiada,
Greece, e-mail: gkorakis@fmenr.duth.gr (corresponding author)

Abstract. *Eriolobus trilobatus*, the only species of the monotypic genus *Eriolobus* (Rosaceae, Maloideae), is one of the rarest trees of the Greek flora and is listed as "Vulnerable" in the *Red Data Book of Rare and Threatened Plants of Greece*. It is an east Mediterranean species having a sparse distribution with several disjunctions. It extends from Lebanon and Syria, through Anatolia, to northeastern Greece and southeastern Bulgaria where the single European localities occur. In this area there are two confirmed reports for Greece and one for Bulgaria. The localities of five new discovered populations of *E. trilobatus* in Greece are presented in this paper as well as notes on habitat and vegetation of the sites.

Key words: plant distribution, threatened species

Introduction

Eriolobus trilobatus is the only species of the monotypic genus *Eriolobus* (Rosaceae, Maloideae) and one of the rarest trees occurring in Greece and Bulgaria, the countries where the European populations are found. It has been listed as "Vulnerable" in the *Red Data Book of Rare and Threatened Plants of Greece* (Phitos & al. 1995).

The taxonomic status of the species was rather ambiguous in the past as has been discussed by Browicz (1969), and the nomenclature chronologically included the following names: *Crataegus trilobata* Poir., *Pyrus trilobata* (Poir.) DC., *Sorbus trilobata* (Poir.) Heynh., *Eriolobus trilobatus* (Poir.) M. Roem., *Cormus trilobata* (Poir.) Decne. and *Malus trilobata* (Poir.) C.K. Schneid.

Eriolobus trilobatus, "bragania" according to the local name given in Evros, is a small, deciduous tree up to 10 m tall. For a species of the Rosaceae family, it is characterised by its late flowering in May–June and because of the large size of the white flowers (diameter up to 4 cm) it can easily be recognised during this period. It is a valuable tree due to the sweet edible fruits it produces late in September, which people pick and store.

From a chorological viewpoint *E. trilobatus* is an East Mediterranean element whose geographical distribution appears to be extremely interesting. It was discovered in 1787 by Labillardière in Lebanon and following this, during the 19th century it was recorded in isolated sites in Anatolia. Today, the known distribution of the species in Asia includes West and South Anatolia, Syria, Lebanon and North Israel, while in Europe its distribution encompasses the east section of Greek Thrace (Evros Prefecture) and southeastern Bulgaria (Browicz 1972; Vulev 1973; Boratyński & al. 1992), even though the indigenous status of the Bulgarian population has been under question (Terpó 1968).

The first European recording was in 1876 by Dingler (1883) who found the plant in Greek Thrace, west of Alexandroupolis, between the villages Makri and Maronia. Two more occurrences were discovered in the district of South Evros in 1961 (by Ball and Wagestaffe) and 1972 (by Stamatiadou), whereas the single Bulgarian stand was found in 1954 in the eastern Rhodope Mountains near the Greek border (Stojanov & al. 1955).

Browicz (1982) in his survey in Evros during June 1979 did not find the references made by Dingler, Ball and Wagestaffe, but was able to confirm the stand re-

ferred to by Stamatiadou north of the village Loutros in the vicinity of Pesani. In his survey he also discovered a new station of *E. trilobatus* 4 km southeast of Mesti.

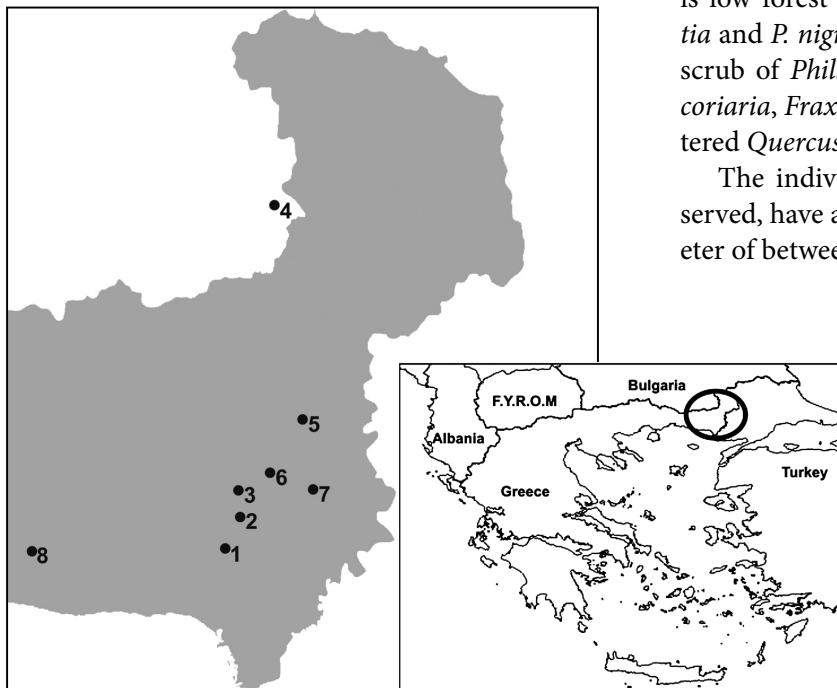
In the present study, an initial recording was made of the locations of the European distribution of *E. trilobatus* and data were provided on its biotope.

Material and methods

The present recording was based on field-work carried out during the month of May in the years 2004–2006. Information relating to the existence of *E. trilobatus* was collected through interviews with people who work in the countryside and the forest, e.g. loggers, foresters, shepherds, etc. The recording of the co-ordinates for the positions of trees, groups of trees and small thickets was executed with the use of Garmin satellite navigator. The co-ordinates of the localities are provided in the Datum *hddd. dddd* WGS 84.

Results and discussion

From the present research, five new areas of distribution were located and they are provided in Fig. 1, together with the three former reports. Detailed recordings of the populations (except Mesti) were also made (Fig. 2). In total, 71 locations of one or more individuals of *Eriolobus trilobatus* were recorded; they are presented in Table 1.



Pesani II stand

The population, which consists of a few young individuals, is located near Pesani Bridge at an altitude of 380 m, in open scrub vegetation.

Fig. 1. Distribution of *E. trilobatus* stands: 1, Nipsa; 2, Pesani I; 3, Pesani II; 4, Mandritsa (Bulgaria); 5, Dadia; 6, Lefkimi I; 7, Lefkimi II; 8, Mesti.

All locations are found in the collinar zone, in maquis or deciduous scrub or in open thermophilous oakwoods and pine forests.

Nipsa stand

The population is located north of the Nipsa settlement in coppice oakwood or mixed pine–oak stands on S, SE and E slopes between an altitude of 170–220 m. The substrate is acid siliceous and the dominant vegetation consists of low and open mixed *Quercus pubescens* – *Quercus ithaburensis* ssp. *macrolepis* stands or *Pinus halepensis* ssp. *brutia* – *Quercus pubescens* – *Quercus ithaburensis* ssp. *macrolepis* stands. In the understory *Phillyrea latifolia*, *Carpinus orientalis*, *Pistacia terebinthus*, *Juniperus oxycedrus*, *Arbutus andrachne* and *Cistus creticus* dominate, but also *Rhus coriaria*, *Paliurus spina-christi*, *Colutea arborescens*, *Pyrus amygdaliformis*, *Tamus communis*, *Asparagus acutifolius* and *Clematis vitalba* are present.

The individuals of *E. trilobatus*, which were observed, have a height of between 1–10 m and a diameter of between 2–45 cm.

Pesani I stand

The population is located north of the village of Loutros, near the Pesani settlement and is also referred to by Browicz (1982). It is found on S, SW and W slopes between an altitude of 210 and 330 m. The substrate is acid siliceous and the dominant vegetation is low forest consisting of *Pinus halepensis* ssp. *brutia* and *P. nigra* ssp. *nigra* plantations and high, dense scrub of *Phillyrea latifolia*, *Arbutus andrachne*, *Rhus coriaria*, *Fraxinus ornus* and *Cistus creticus*. Also scattered *Quercus frainetto* individuals occur.

The individuals of *E. trilobatus*, which were observed, have a height of between 2.5–9 m and a diameter of between 4–40 cm.

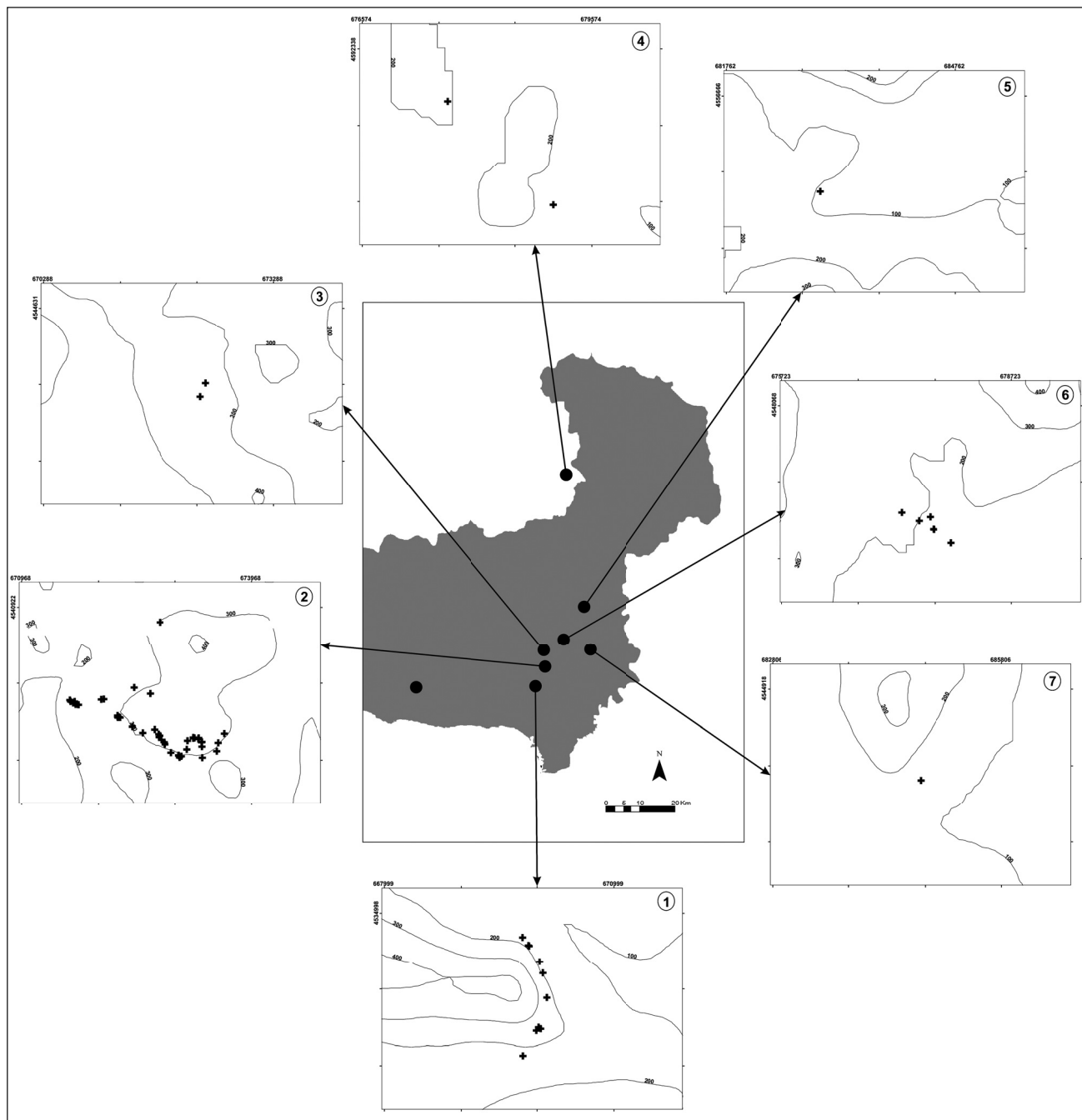


Fig. 2. Detailed maps of *E. trilobatus* distribution in the recorded stands. Numbers as in Fig. 1.

The individuals of *E. trilobatus*, which were observed, have a height of between 3–4 m and a diameter of between 5–8 cm.

Bulgaria stand

The Bulgarian population consists of two mature individuals found in the vicinity of Mandritsa, at an altitude of 180–210 m.

Dadia stand

This stand includes one individual that occurs west of Dadia village at an altitude of 166 m. It grows in *Pinus halepensis* ssp. *brutia* forest where scattered *Quercus pubescens* individuals are found. The shrub layer consists of *Phillyrea latifolia* and *Pistacia terebinthus*.

The individual observed has a height of 9 m and a diameter of 16 cm.

Table 1. Location of the recordings.

ID	LAT	LONG	STAND
101	40.93421	26.01892	NIPSA
102	40.93715	26.02103	NIPSA
103	40.93736	26.02175	NIPSA
104	40.93749	26.02142	NIPSA
105	40.94096	26.02280	NIPSA
106	40.94390	26.02227	NIPSA
107	40.94523	26.02182	NIPSA
108	40.94714	26.02022	NIPSA
109	40.94816	26.01926	NIPSA
110	40.94723	26.02014	NIPSA
201	41.00197	26.05611	PESANI I
202	40.99353	26.05433	PESANI I
203	40.99430	26.05182	PESANI I
204	40.99243	26.04316	PESANI I
205	40.99247	26.04286	PESANI I
206	40.99249	26.04274	PESANI I
207	40.99281	26.04258	PESANI I
208	40.99267	26.04237	PESANI I
209	40.99282	26.04198	PESANI I
210	40.99301	26.04187	PESANI I
211	40.99299	26.04670	PESANI I
212	40.99304	26.04709	PESANI I
213	40.99106	26.04919	PESANI I
214	40.99097	26.04919	PESANI I
215	40.99093	26.04915	PESANI I
216	40.99085	26.04920	PESANI I
217	40.99090	26.04938	PESANI I
218	40.99082	26.04954	PESANI I
219	40.98974	26.05142	PESANI I
220	40.85480	26.07116	PESANI I
221	40.98898	26.05300	PESANI I
222	40.98933	26.05485	PESANI I
223	40.98880	26.05547	PESANI I
224	40.98861	26.05570	PESANI I
225	40.98847	26.05550	PESANI I
226	40.98844	26.05557	PESANI I
227	40.98816	26.05590	PESANI I
228	40.98784	26.05640	PESANI I
229	40.98761	26.05644	PESANI I
230	40.98756	26.05645	PESANI I
231	40.98626	26.05851	PESANI I
232	40.98623	26.05855	PESANI I
233	40.98603	26.05869	PESANI I
234	40.98613	26.05895	PESANI I
235	40.98690	26.05980	PESANI I
236	40.98795	26.05998	PESANI I
237	40.98822	26.06086	PESANI I
238	40.98827	26.06101	PESANI I
239	40.98829	26.06088	PESANI I
240	40.98828	26.06104	PESANI I
241	40.98814	26.06163	PESANI I

242	40.98826	26.06171	PESANI I
243	40.98776	26.06220	PESANI I
244	40.98770	26.06214	PESANI I
245	40.98721	26.06217	PESANI I
246	40.98591	26.06217	PESANI I
247	40.98663	26.06442	PESANI I
248	40.98762	26.06469	PESANI I
249	40.98868	26.06566	PESANI I
250	41.02681	26.05167	PESANI II
301	41.02840	26.05254	PESANI II
401	41.45936	26.12935	BULGARIA
402	41.44681	26.14551	BULGARIA
501	41.13191	26.18199	DADIA
601	41.05452	26.11154	LEFKIMI I
602	41.05351	26.11417	LEFKIMI I
603	41.05392	26.11594	LEFKIMI I
604	41.05246	26.11639	LEFKIMI I
605	41.05241	26.11644	LEFKIMI I
606	41.05083	26.11905	LEFKIMI I
701	41.02642	26.19934	LEFKIMI II

Lefkimi I stand

The population is located northwestward of the village of Lefkimi in low pine forest and high scrub. It is found on S and SE slopes between an altitude of 180 m and 270 m. The substrate is metamorphic, mainly schist and the vegetation in the tree layer consists of *Pinus halepensis* ssp. *brutia*, *Quercus pubescens* and scarce *Q. frainetto*, while in the shrublayer *Phillyrea latifolia*, *Pistacia terebinthus*, *Arbutus andrachne*, *Fraxinus ornus*, *Sorbus domestica*, *S. torminalis* and *Cistus creticus* dominate.

The individuals of *E. trilobatus*, which were observed, have a height of between 3–8 m and a diameter of between 4–15 cm.

Lefkimi II stand

This stand includes one mature tree, which is encountered at the edge of Lefkimi village at an altitude of 168 m. The individual observed has a height of 10 m and a diameter of 43 cm.

From the results of this research, it appears that *E. trilobatus* presents a relatively wide but particularly sparse distribution in the central and southern section of the Evros Prefecture. Its distribution generally follows the altitudinal zone of 150–350 m and perhaps reaches inside the borders of Bulgaria. Its population, according to reports by the local inhabitants, has decreased in the last decades, despite the fact that traditionally it has been protected from logging due to its edible fruits.

The location and mapping of the other existing European populations of the species in Greece and Bulgaria, the estimation of possible threats, as well as the planning of *in situ* and *ex situ* conservation measures must be set as objectives for future research.

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