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DOI: 10.2478/ahr-2019-0003

Acta Horticulturae et Regiotecturae 1
Nitra, Slovaca Universitas Agriculturae Nitriae, 2019, pp. 14–18

ORIENTAL PLANES *PLATANUS ORIENTALIS* L. AND OTHER MONUMENTAL TREES IN CENTRAL SQUARES AND CHURCHYARDS IN NW GREECE: SACRED, EMBLEMATIC AND THREATENED

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Trees often offer meaningful metaphors of and for society, connecting symbolically social and cultural life and creating specific bonds between nature and culture. We studied central squares and churchyard trees in the mountainous villages of Epirus, NW Greece, recording tree species and measuring their characteristics in the field, using also ethno-ecological tools for valuing their importance in the local community. The most common trees are monumental oriental plane trees (*Platanus orientalis* L.) which provide a focal point for community life and serve locally as symbols of community origin, reunion and inter-generational continuity. Such plane trees are also highly appreciated nationally for their aesthetic qualities and historical value. Recognition of the conservation importance of monumental trees should be a high priority, so as to secure the future of emblematic trees and the cultural landscapes they create, especially as invasive pathogens are spreading worldwide threatening their existence.

Keywords: cultural landscapes, sacred natural sites, North Pindos National Park

Trees are vital elements of the landscape providing visible symbols of social process and collective identity. Especially long-lived trees are natural symbols of strength, fertility and genealogical connections. Also, the vitality and regenerative power of trees make them amenable symbols of life (Rival, 2001). In modern Greek landscapes, very old trees are interrelated with the churches or iconstands that they accompany, in a way that allows locals to consider ancient trees as emblems of the sacred (Kyriakidou-Nestoros, 1989). In places of worship, trees are often deliberately planted and chosen species differ from native vegetation aiming at the construction of landscape aesthetics and separation of everyday routine, work and survival from community life, festivities and worship (Hobhouse, 2004; Nitsiakos, 1997). Especially 'veteran' trees are of interest aesthetically, culturally and biologically, as objects of respect or religious reverence and valuable habitats for other creatures. However, it is the processes of becoming ancient and not the actual age of a tree, that is of interest (Parker and Lewington, 2012; Rackham, 2006).

Our aim is to present data about ancient trees in sacred and public places inside villages in Pindos National Park, NW Greece and discuss conceptualizations and related conservation issues. The objectives are:

1. to elaborate on the species diversity in sacred sites inside villages;
2. to present data from two mountainous municipalities in NW Greece;
3. to comment on perceptions of monumental trees;
4. to examine why certain species serve as emblematic;
5. to discuss conservation priorities.

Material and methods

Our research took place in 48 villages in the municipalities of Zagori (37 villages) and Konitsa (11 villages), in the Epirus region of NW Greece. The area is well recognized because of its traditional architecture, rich biodiversity (North Pindos National Park, 11 NATURA 2000 sites) and geological value (UNESCO Geopark) (Pindos National Park, 2018), Figure 1. Field visits were realized in 2008, 2012–2015 and 2018. We recorded trees inside villages related to church yards and squares. In each site we selected 1–5 (maximum) trees with girth <50 cm and we documented tree species, form (maiden or shaped), *gbh* (girth at breast height, 1.3 m), associated artifacts (e.g. bells, benches attached to the trees etc.) and tree health (crown condition categories: 1–4; dying tree categories: 1–5 (Wong, 2005). We also interviewed local people about species uses and value and we collected narratives (Stara et al., 2015a). In this paper we analyze data related to tree species inside villages and their contribution to landscape character.

Results and discussion

We have recorded 133 trees in 72 different sites (1–3 in each village), related to central churches and village squares. Often the churchyard serves as the village square or is placed nearby. Recorded trees belong to 26 species. The majority of the trees recorded have been oriental

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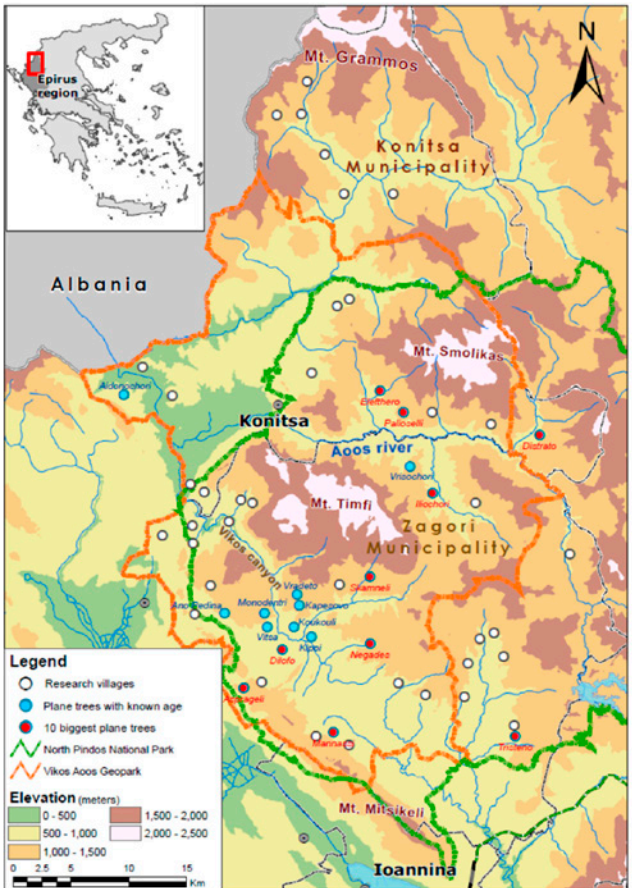

Figure 1 The study area and location of *Platanus orientalis* L. with known age and maximum girth at breast height recorded (see Table 1)
Source: made by the authors

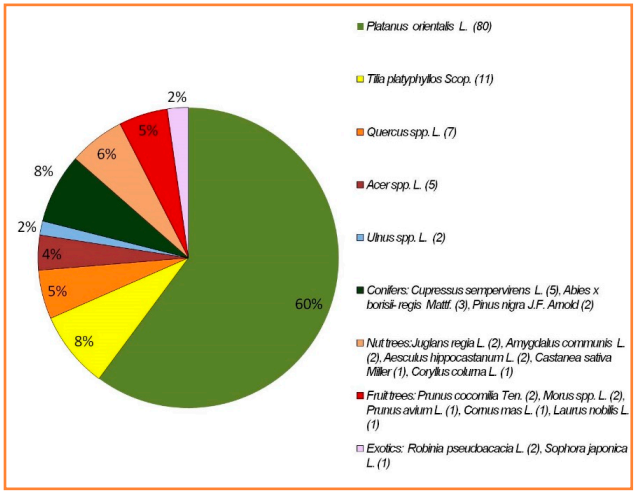

Figure 2 Tree species composition (n = 133 trees) in churchyards and central squares
Source: made by the authors

plane trees (*Platanus orientalis* L.), followed by large leaved limes (*Tilia platyphyllos* Scop.), oaks (*Quercus pubescens* Willd., *Q. coccifera* L., *Q. dalechampii* Ten.), maples (*Acer monspessulanum* L., *A. platanoides* L. *A. pseudoplatanus* L.), native evergreens (*Pinus nigra* J.F. Arnold, *Abies* × *borisii-regis* Mattf.) and planted trees typical to churchyards (*Cupressus sempervirens* L., *Lauris nobilis* L.). We have also recorded few rare forest trees (*Aesculus hippocastanum* L., *Corylus colurna* L., *Ulmus* L.), wild fruit or edible seeds trees (*Cornus mas* L., *Prunus cocomilia* Ten., *Juglans regia* L., *Amygdalus communis* L., *Morus* L., *Castanea sativa* Miller, *Prunus avium* L.) and exotics (*Robinia pseudoacacia* L., *Sophora japonica* L.), Figure 2 and 3. Except of exotics, and *Cupressus sempervirens* L. and *Lauris nobilis* L., native in Greece but not in mountainous inland Epirus, all trees are native in the region.

The *Platanus orientalis* L. is one of the largest and longest-lived trees of Greece and is the most representative of Greece's riparian forests. Impressive dimensions, great longevity, a huge leafy crown and the association with water rationalize its association with human settlements in the Eastern Mediterranean from prehistoric times (Grove and Rackham, 2001), while the idea that plane trees were gifts from the gods explains deliberate plantations in public and sacred places during the classical antiquity (Baumann, 1993). Certain monumental trees referred as alive from antiquity including those associated with Aristotle's peripatetic school in the area of Naoussa (384-322 BC) or Hippocrates, father of Medicine (460-377 BC) on the island of Kos, while the Cretan evergreen variety (*Platanus orientalis* L., var. *cretica*) was thought of as the offspring of the tree that hosted the sacred marriage of Zeus and Europa (Baumann, 1993). However, most of the historic plane trees of Greece are related to the national legend of heroic struggles for Greek independence (1821); under the shade of Agia Lavra's monastery plane tree the war of independence was blessed and began; plane trees hosted local heroes or became

Figure 3 Examples of trees in central church yards and squares in Zagori, NW Greece
Photos: K. Stara
Description: (left) belfry prickly oak in the churchyard of Elatochori; (middle) large leaved lime in the church yard of Doliani; (right) downy oak in the churchyard – old square of Kipi

Figure 4 Examples of *Platanus orientalis* L. in their natural habitat and village squares
Photos: K. Stara
Description: (left) Aoos riparian forest in Konitsa; (middle) the second biggest plane tree in Zagori in front of the school of Dilofo; (right) characteristic shaped for shade plane tree in Vitsa, Zagori

Figure 5 Examples of *Platanus orientalis* L. and their association with the sacred
Photos: K. Stara
Description: (left) outlying icon-stand by a chapel plane tree in Krystallopigi, Thesprotia; (middle) belfry tree in Pades, Konitsa; (right) stone inscription in the church entrance of Koukouli, Zagori, indicates the plane tree's planting date (1813)

gibbets for others, generally symbolizing the ending of the Ottoman Occupation (Loukatos, 1971; Tsitsas, 2005). Consequently, from the 39 monumental trees that are listed to the catalogue of Greek Nature's Monuments belonging to 10 different species, 23 are plane trees, included mainly because of their historic value and relation to the war of independence (Stara and Vokou, 2015).

In our study area, few plane trees grow naturally inside villages, while most of them were said to be transported from riverbanks nearby, Figure 4. Even if *Cupressus sempervirens* L. and *Lauris nobilis* L., seem to have started to dominate orthodox sacred sites recently, in mountainous rural Greece we can definitely associate oaks and maples with outlying churches, plane trees with central squares or churches and evergreens with cemeteries (Stara et al., 2015). Inscriptions concerning planting dates of plane trees in nearby churches confirm the species' relationship with the sacred. Great dimensions support their use as bell towers, while hollowed trunks give opportunities for their use as tree chapels, Figure 5. Symbolic lore heritage accords to the species a protective character for community life. Old plane trees are thought of as haunted guardians of their villages, protecting them from malevolent natural or supernatural powers. Accordingly, in villages where recurring calamities were happening, ritual reestablishments required the scarification of animals, over the burial place of which plane trees magically grew, further enhancing the protective supernatural power of the species (Alexakis, 2001; Politis, 1994).

Because of their conceptualization as protectors, plane trees are symbolically placed in the centre of the village, along with the central church, public buildings, i.e. schools and fountains providing a focal point for community life and symbolically access to common goods, such as the water, for all community members (Arapoglou, 2005; Nitsiakos, 1997). Their presence is so emblematic that people often replace the word tree (δέντρο) with the word plane tree (πλάτανος), regardless of the species when referring to huge trees. Indeed, the very presence of these trees in village squares is associated with the community's history, strength and vitality. Hence, plane trees embody the nostalgia of people from Diaspora, who return to their ancestral villages in Greece for annual summer festivals taking place under the plane tree (Stara et al., 2015a), Figure 6.

In an effort to construct a community's history, narratives refer to plane trees as having been planted by village founders. However, contrary to oral traditions that suggest villages and their plane trees as coeval and date them back to the 16th–17th century, or even before, inscriptions suggest that many plane

Figure 6 Illustrations of *Platanus orientalis* L. and their special role in social life and history
Source: Mylonas (2006); Farsakidis (1979); George de la Poer Beresford (1855);
Description: (left) annual celebration in Laista, Zagori; (middle) announcements posted in the trunk of a plane tree in Zagora, Pilio; (right) the "withering" gibbet plane tree of Ali Pasha in Arta, one of the Natural Monuments of Greece (1976)

trees in the villages of Zagori were planted in the 19th century, often replacing older broadleaved or prickly oaks and maples, Table 1. Except of plane trees we have known indications of age for very few other tree species. Characteristic examples are: a *Quercus pubescens* Willd., in a church yard in Aristi village, *gbh* =115.8 cm and an *Ostrya carrinifolia* Scop., by an outlying ikonstand in Laista village, *gbh* = 154.5 cm. According to the legend the species mentioned above existed when St Kosmas the Aetolian accomplished his missionary journeys in the region (1714–1779). Apart from their age, it is the maiden form which differentiates sacred from secular (or "working", e.g. coppiced, pollarded or shredded) trees, as cutting taboos and the fear of supernatural punishments discourage people to use the wood of sacred trees (Stara et al., 2015). Accordingly, sacred trees have a maiden form or, as in the case of plane trees, these are often deliberately shaped, as to give a wider shade or for safety reasons, because of their close proximity to buildings. Furthermore, some of these trees serve as belfry trees, are surrounded by stone wall enclosures usually covered by wooden boards, hold loudspeakers, electricity cables or spotlights, while announcements or advertisements are often posted in the trunk with pinches, Figure 6.

Interviews with villagers describe in a unique manner the bonds between locals and the plane trees of their village: "I value you as a plane tree in my yard", "There is no village without a plane tree", "Our village without the plane tree is a nothing", "Plane trees are immortal", "The old plane tree knows a lot, generations of generations passed though him", "I am 85 years old, since I have known the world it is there, neither falls nor dry. It offers shade and coolness", "The heroic plane tree, it has been shouted, injured, wounded".

Legal institution does not always assure the protection of monumental trees; while until very recently the procedure of declarations was particularly slow (e.g. 23 years for the declaration of the plane tree of Sevastiana, West Macedonia in 2017). Things have improved after changes in the law (3937/2011 FEK 60A), which simplify the procedure, while all at once initiatives from the private sector, i.e. the Association of Cretan Olive Municipalities (ACOM), declare ancient olive trees as monumental aiming to protect them as living monuments of cultural heritage and promote them as tourist attractions (Tsantakis, 2017). During this research we have lost the *Acer monspessulanum* L. of the central church of the famous touristic village Mikro Papingo in Zagori. This loss along with other cases of monumental trees that are cut or suffering by

Table 1 *Platanus orientalis* L. with known age according to narratives or inscriptions and girth at breast height (*gbh*) of the 10 biggest plane trees recorded

Trees with known age			The 10 biggest trees	
Village	**age (y)**	***gbh* (m)**	**Village**	***gbh* (m)**
Koukouli – Zagori (Fig. 4)	205	5.54	**Iliochori – Zagori**	9.99
Ano Pedina – Zagori	199	5.60	**Dilofo – Zagori (Fig. 3)**	8.42
Monodentri – Zagori	159	3.86	**Skamneli – Zagori**	8.01
Kapesovo – Zagori	152	4.18	**Mannassi –Zagori**	7.65
Vrisochori – Zagori	120	5.73	**Distrato – Konitsa**	7.44
Vitsa – Zagori	118	2.53	**Tristeno – Zagori**	7.22
Aidonochori – Konitsa (cut)	94	4.74	**Aspragеli – Zagori**	7.21
Vradeto – Zagori	79	2.63	**Palioseli – Konitsa**	7.21
Kipoi – Zagori	41	2.27	**Elefthero – Konitsa**	7.1
			Negades – Zagori	7.02

modern inadequate management has been our inspiration to create an educational package on the value of ancient trees that has been distributed to schools, public services and associations of the region (Stara and Vokou, 2015). However, recently a new peril has been added to the list of threats to monumental *Platanus orientalis* L. The lethal invasive pathogen *Ceratocystis platani*, a fungus causing canker stain disease, is expanding rapidly after its first appearance in the country in 2003; it has already assumed epidemic proportions along several rivers in Epirus, where eradication is impossible (Tsopelas et al., 2017). The disease is spreading by accidental anthropogenic contamination (e.g. pruning and cutting tools) and therefore especially shaped trees are of immediate threat of infection. It has already killed emblematic plane trees in our study sites in Konitsa: Aidonochori (plane tree planted in 1924) and Melissopetra as also in the traditional Syrrako village in the nearby area of Mt. Peristeri (Tzoumerka, Acheloos, Agrafa and Meteora National Park). In addition to *C. platani*, plane trees in Greece are under constant pressure from leaf mining insects such as *Phyllonorycter platani* (Lepidoptera, Gracillariidae) and *Corythucha ciliata* (Hemiptera, Tingidae) that significantly weaken their physiology, rendering the trees vulnerable to secondary pests and diseases (Toth and Lakatos, 2018; Tzanakakis, 1988).

Conclusions

- Among the twenty six tree species recorded inside villages in the mountainous municipalities of Epirus in NW Greece, planted *Platanus orientalis* L. dominate.
- These giants of the Greek flora, along with other species of an old age are very much appreciated as a living heritage and a link with ancestors and the past. Moreover, modern views conceptualize emblematic trees as landscape elements, special places for inspiration and particular habitats for biodiversity.
- Inadequate management, lack of awareness and unintentional damage in conjunction with global spread of new lethal tree diseases are threatening their existence, worldwide and Greece is not an exception with *Ceratocystis platani* to be evaluated as a lethal threat for *Platanus orientalis* L. that can result in the complete elimination of the species.
- However, planted monumental trees can contribute to ex situ species conservation, as sacred and public places inside settlements can provide a safe protected shelter for the most 'social' trees of the Greek flora.

Acknowledgements

Data collection was funded through "Reinforcement Program of Human Research Manpower" PENED (2005–2008) and "Operational Program Education and Lifelong Learning" of the National Strategic Reference Framework (NSRF) – Research Funding Program: THALIS Investing in knowledge society" through the European Social Fund (2012–2015), co-financed by National and Community Funds. The authors thank John M. Halley and the anonymous reviewer for their valuable comments on the manuscript, Attila Tóth for the invitation to contribute to this volume, Jennifer L.G Wong for helpful advice and collaboration during research, Alkiviadis Betsis for the creation of the map and Dimitrios Avtzis for his advice on phytopathological issues.

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