



## Technical Note

## Meet Adonis, Europe's oldest dendrochronologically dated tree

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Dendrochronologists from the Universities of Mainz (Germany), Stockholm (Sweden), and Tucson, Arizona (USA) have found a 1075 year old Bosnian pine (*Pinus heldreichii*) in the Pindos Mountains in northern Greece. Due to where it was found, and the tree's venerable age, the scientists have named it "Adonis" after the Greek mythological god of beauty and vegetation.

Adonis, along with dozens of other aging members of its species, is growing at around 2000 m a.s.l. in a harsh alpine environment that characterizes the highest treelines of the region. "Adonis and its cohort are all individual trees with their own individual root system—each one is a unique plant" says Valerie Trouet from the University of Arizona. "It's quite remarkable that this large, complex and impressive organism has survived so long in such an inhospitable environment, in a land that has been civilized for over 3000 years" says Krusic, leader of several expeditions conducted by the Navarino Environmental Observatory, a cooperation between Stockholm University, the Academy of Athens, and Temes S.A. (Greece).

The first expedition took place in 2013 after Krusic found a photograph of the forest in the dissertation of Robert Brandes (2007, University of Erlangen-Nürnberg). In 2013, Krusic took a 60 cm core from Adonis to count its rings, but that core was too short to reach the pith. Nevertheless, the 2013 sample contained over 900 rings. Returning in 2016, the team purposefully brought a one-meter borer to take a longer core from the same tree. Though still slightly missing the pith, the new 91 cm core contained 1075 rings (Fig. 1), making "Adonis" Europe's oldest dendrochronologically dated tree.

The team anticipates that climate variations recorded by the millennium-old Greek trees will provide new insights into Europe's environmental history. "In addition to these very old individuals, the abundance of dead wood in this region is extraordinary. It allows us to develop climate sensitive chronologies of more than 1500 years", says Jan Esper from the University of Mainz. "These data could substantially contribute to the understanding of past climatic variations in the eastern Mediterranean region."

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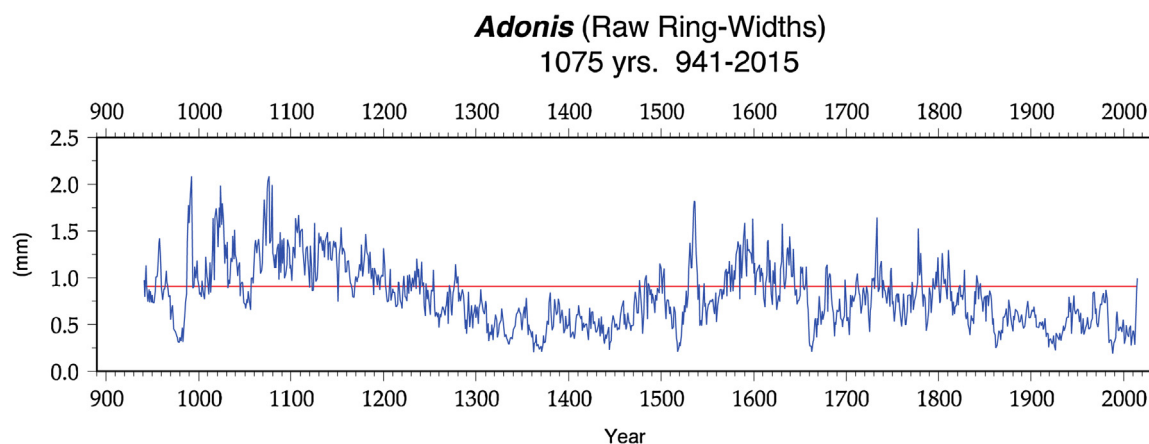
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Fig. 1. Raw ring-widths of Adonis.