

Transpiration rates of pine (*Pinus brutia*) and cypress (*Cupressus sempervirens*) trees in a Mediterranean mixed plantation forest

Hakan Djuma, Adriana Bruggeman, Marinos Eliades, Panagiota Venetsanou, Christos Zoumides, Melpomeni Siakou

Energy, Environment and Water Research Center, The Cyprus Institute

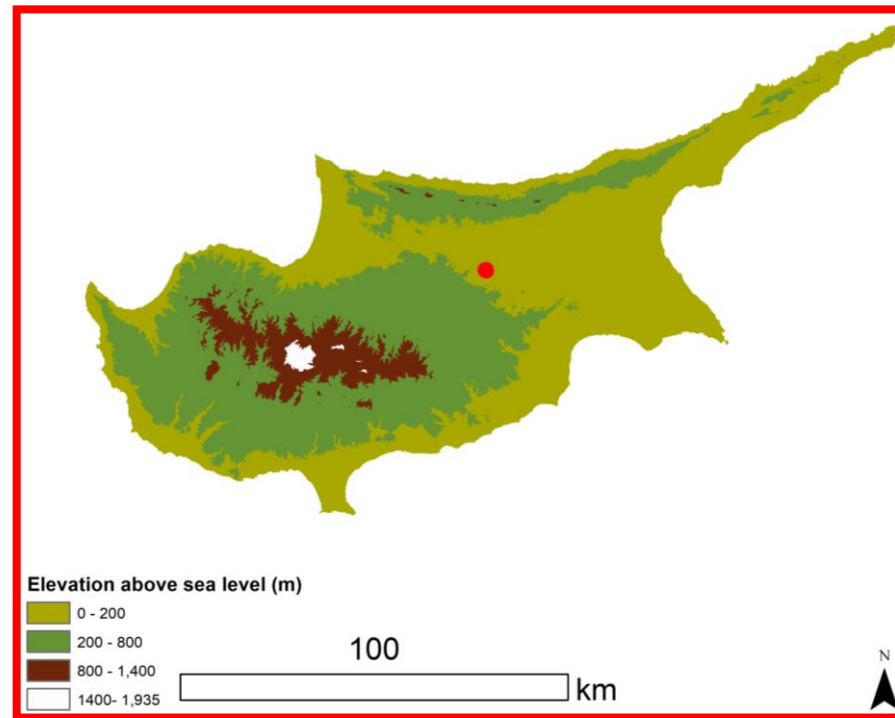


Objectives:

- to quantify transpiration of pine (*Pinus brutia*) and cypress (*Cupressus sempervirens*) trees.
- to analyze the effects of environmental variables (meteorology and soil moisture) on transpiration.

Study location:

Athalassa Forest Park, Cyprus



Study site specifications:

- Mixed forest planted in 2011, previously agriculture.
- ~2,400 tree/bushes of pine, cypress, pistacia, olive, carob, oak
- Approximate 6-m planting space
- Size: 10 ha
- Relatively flat terrain (4% mean slope)
- Average rainfall: 320 mm/yr
- Geology: Nicosia formation (siltstones and layers of calcarenites and marls) and Athalassa formation (calcarenites interlayered with sandy marls)
- Soil texture: Loamy sand



Study site instrumentation :

12 sap flow sensors (Figure 1):

6 pine, 6 cypress

1 meteorological station (Figure 1):

Wind speed, direction, precipitation,
temperature, relative humidity, radiation

90 soil moisture sensors (Figure 1 and 2):

10 cm, 30 cm, 50 cm depths. Locations: Under canopy cover, edge of canopy cover, no canopy cover.

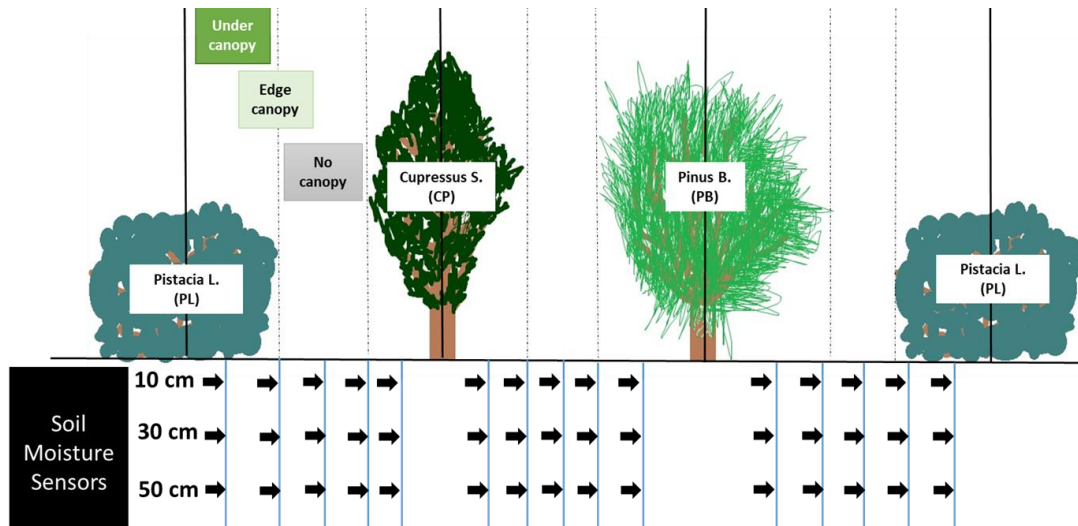


Figure 2. Soil moisture sensor locations

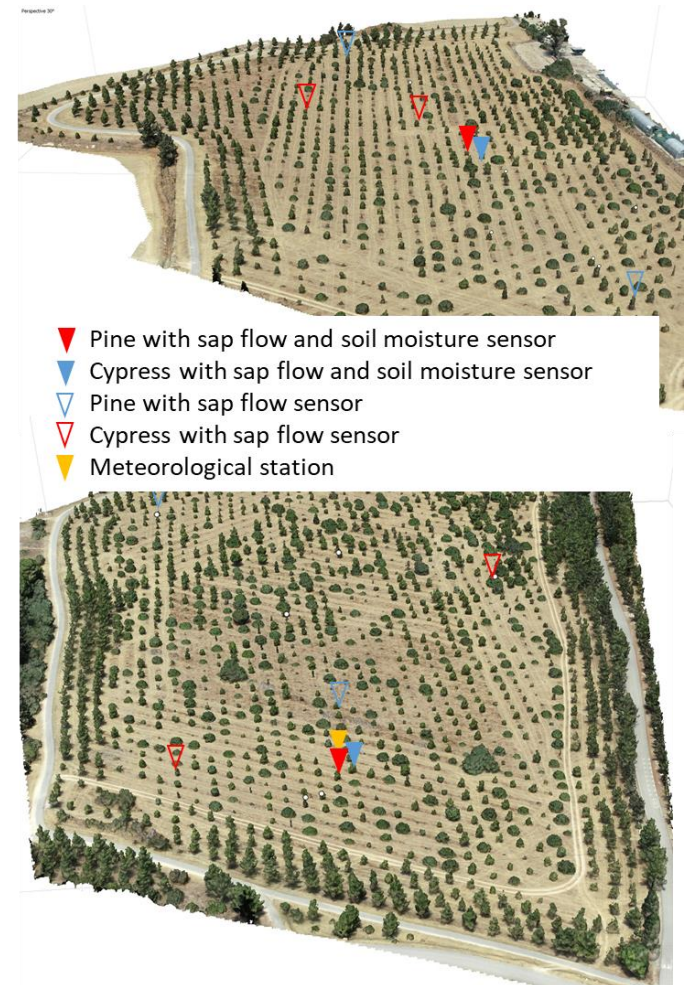


Figure 1. 3D model of the site with sap flow sensors, soil moisture sensors and meteorological station locations

Results and conclusions will be presented in 2-minute live session on Tue, 27 Apr, 11:02–11:04 and will be included here after the session.



Contact:
Hakan Djuma
h.djuma@cyi.ac.cy
www.cyi.ac.cy

This research has received support from the Water JPI (Joint Call 2018) FLUXMED Project (P2P/WATER/0218/0011), funded by the Republic of Cyprus through the Cyprus Research and Innovation Foundation.