

Curriculum Vitae

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Aris Kyparissis

Professor of Plant Ecophysiology

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EDUCATION

1990 BSc in Biology – Department of Biology, University of Patras, Greece
1995 PhD in Plant Ecophysiology – Department of Biology, University of Patras, Greece
Thesis title: *Phlomis fruticosa* L.: the pattern of seasonal leaf dimorphism and the adaptive potential of leaves to the Mediterranean climate

PROFESSIONAL POSITIONS

2025 – Professor in the Department of Agriculture Crop Production and Rural Environment, University of Thessaly, Greece
2018 – 2025 Associate Professor in the Department of Agriculture Crop Production and Rural Environment, University of Thessaly, Greece
2012 – 2018 Associate Professor in the Department of Biological Applications and Technologies, University of Ioannina, Greece
2001 – 2012 Assistant Professor in the Department of Biological Applications and Technologies, University of Ioannina, Greece
2000 – 2001 Visiting Lecturer in the Department of Agriculture Crop Production and Rural Environment, University of Thessaly, Greece

SCOLARSHIPS

1992 – 1995 PhD Scholarship from the Greek Scholarship Foundation
1993 Erasmus Scholarship for 3 months at the Abisko Scientific Research Station of the Royal Swedish Academy of Sciences

TEACHING EXPERIENCE

Theoretical and laboratory undergraduate courses of **Plant Anatomy and Morphology**, **Plant Physiology**, **Ecophysiology of Mediterranean Plants** and **Geographical Information Systems and Remote Sensing**.

Supervision of 5 PhD, 4 MSc and 24 BSc students.

RESEARCH INTERESTS

- Plant Ecophysiology
- Ecosystem dynamics through field measurements, modeling and remote sensing
- Effects of Global Climate Change on plants

SELECTED RESEARCH PROJECTS

- Participation in the project **Applications of sustainable soil management and precision agriculture techniques towards the sustainability of arable crops**. In collaboration with the Centre for Research and Technology of Greece. The project was funded by the Ministry of Rural Development and Food of Greece (ongoing).
- Participation in the project **Regenerative approaches for building climate change resilience into EU agricultural regions prone to desertification**. In collaboration with the Agricultural Research Institute of Cyprus. The project was funded by the LIFE21-CCA-CY-LIFE program (ongoing).
- Principal Investigator in the project **Development of a satellite monitoring system for the estimation of primary productivity of the forests of Northern Pindus National Park in a GIS environment**. In collaboration with the Institute for Astronomy, Astrophysics, Space Applications and Remote Sensing (IAASARS) of the National Observatory of Athens (NOA). This research project has been co-financed by the European Union (European Regional Development Fund-ERDF) and Greek national funds through the Operational Program "THESSALY- MAINLAND GREECE AND EPIRUS-2007-2013" of the National Strategic Reference Framework (NSRF 2007-2013) (2012 – 2015).
- Participation in the project **Advanced technologies and remote sensing techniques in the monitoring and protection of forestal and other land ecosystems**. In collaboration with the Institute for Astronomy, Astrophysics, Space Applications and Remote Sensing (IAASARS) of the National Observatory of Athens (NOA). The project was financed by the General Secretariat for Research and Technology of Greece (Programme "Human Resources in Research and Technology, Creation of Human Networks", Measure 8.3, Action 8.3.6) (2007).
- Participation in the project **Study of Ecosystem Dynamics using CHRIS/PROBA Hyperspectral data**. In collaboration with the Institute for Astronomy, Astrophysics, Space Applications and Remote Sensing (IAASARS) of the National Observatory of Athens (NOA) and European Space Agency (ESA). Principal Investigator Dr Olga Sykioti (IAASARS, NOA) (2006 – 2016).
- Principal Investigator in the project **A study of ecosystem dynamics of Northern Pindus National Park using satellite images**. In collaboration with the Institute for Astronomy, Astrophysics, Space Applications and Remote Sensing (IAASARS) of the National Observatory of Athens (NOA) and the Laboratory of Meteorology of the Physics Department of University of Ioannina. The project was financed by the Ministry of Education and Religious Affairs of Greece (2005 – 2007).

PUBLICATIONS IN INTERNATIONAL JOURNALS

1. Kyparissis A. & Manetas Y. 1993. Seasonal leaf dimorphism in a semi-deciduous Mediterranean shrub: ecophysiological comparisons between winter and summer leaves. *Acta Oecologica*, 14, 23-32.
2. Kyparissis A. & Manetas Y. 1993. Autumn revival of summer leaves in the seasonal dimorphic, drought semi-deciduous Mediterranean shrub *Phlomis fruticosa* L. *Acta Oecologica*, 14, 725-737.

3. Karabourniotis G., Kyparissis A. & Manetas Y. 1993. Leaf hairs of *Olea europaea* protect underlying tissues against ultraviolet-B radiation damage. *Environmental and Experimental Botany*, 33, 341-345. [https://doi.org/10.1016/0098-8472\(93\)90035-E](https://doi.org/10.1016/0098-8472(93)90035-E)
4. Grammatikopoulos G., Karabourniotis G., Kyparissis A., Petropoulou Y. & Manetas Y. 1994. Leaf hairs of olive (*Olea europaea* L.) prevent stomatal closure by ultraviolet-B radiation. *Australian Journal of Plant Physiology*, 21, 293-301. <https://doi.org/10.1071/PP9940293>
5. Grammatikopoulos G., Kyparissis A. & Manetas Y. 1995. Seasonal and diurnal gas exchange characteristics and water relations of the drought semi-deciduous shrub *Phlomis fruticosa* L. under Mediterranean field conditions. *Flora*, 190, 71-78. [https://doi.org/10.1016/S0367-2530\(17\)30627-8](https://doi.org/10.1016/S0367-2530(17)30627-8)
6. Petropoulou Y., Kyparissis A., Nikolopoulos D. & Manetas Y. 1995. Perturbations of the normal UV-B radiation environment alter leaf growth rates in *Phlomis fruticosa* L. seedlings. *Environmental and Experimental Botany*, 35, 371-377. [https://doi.org/10.1016/0098-8472\(95\)00016-5](https://doi.org/10.1016/0098-8472(95)00016-5)
7. Petropoulou Y., Kyparissis A., Nikolopoulos D. & Manetas Y. 1995. Enhanced UV-B radiation alleviates the adverse effects of summer drought in two Mediterranean pines under field conditions. *Physiologia Plantarum*, 94, 37-44. <https://doi.org/10.1111/j.1399-3054.1995.tb00781.x>
8. Nikolopoulos D., Petropoulou Y., Kyparissis A. & Manetas Y. 1995. Effects of enhanced UV-B radiation on the drought semi-deciduous Mediterranean shrub *Phlomis fruticosa* L. under field conditions are season-specific. *Australian Journal of Plant Physiology*, 22, 737-745. <https://doi.org/10.1071/PP9950737>
9. Kyparissis A., Petropoulou Y. & Manetas Y. 1995. Summer survival of leaves in a soft-leaved plant (*Phlomis fruticosa* L., Labiatae) under Mediterranean field conditions: avoidance of photoinhibitory damage through decreased chlorophyll contents. *Journal of Experimental Botany*, 46, 1825-1831. <https://doi.org/10.1093/jxb/46.12.1825>
10. Bjorn L.O., Callaghan T.V., Johnsen I., Lee J.A., Manetas Y., Paul N.D., Sonesson M., Wellburn A.R., Coop D., Heide-Jorgensen H.S., Gehrke C., Gwynn-Jones D., Johanson U., Kyparissis A., Levizou E., Nikolopoulos D., Petropoulou Y. & Stephanou M. 1997. The effects of UV-B radiation on European Heathland Species. *Plant Ecology*, 128, 252-264. <https://doi.org/10.1023/A:1009782207376>
11. Kyparissis A., Grammatikopoulos G. & Manetas Y. 1997. Leaf demography and photosynthesis as affected by the environment in the drought semi-deciduous Mediterranean shrub *Phlomis fruticosa* L. *Acta Oecologica*, 18, 543-555. [https://doi.org/10.1016/S1146-609X\(97\)80040-9](https://doi.org/10.1016/S1146-609X(97)80040-9)
12. Manetas Y., Grammatikopoulos G. & Kyparissis A. 1998. The use of the portable, non-destructive, SPAD-502 (Minolta) chlorophyll meter with leaves of varying trichome density and anthocyanin content. *Journal of Plant Physiology*, 153, 513-516. [https://doi.org/10.1016/S0176-1617\(98\)80182-X](https://doi.org/10.1016/S0176-1617(98)80182-X)
13. Grammatikopoulos G., Kyparissis A., Drilias P., Petropoulou Y. & Manetas Y. 1998. Effects of UV-B radiation on cuticle thickness and nutritional value of leaves in two Mediterranean evergreen sclerophylls. *Journal of Plant Physiology*, 153, 506-512. [https://doi.org/10.1016/S0176-1617\(98\)80181-8](https://doi.org/10.1016/S0176-1617(98)80181-8)
14. Kyparissis A., Drilias P. & Manetas Y. 2000. Seasonal fluctuations in photoprotective (xanthophyll cycle) and photoselective (chlorophylls) capacity in eight Mediterranean plant species belonging to two different growth forms. *Australian Journal of Plant Physiology*, 27, 267-274. <https://doi.org/10.1071/PP99037>
15. Moody S.A., Paul N.D., Bjorn L.O., Callaghan T.V., Lee J., Manetas Y., Rozema J., Gwynn-Jones D., Johanson U., Kyparissis A. & Oudejans A.M.C. 2001. The direct effects of UV-B radiation on *Betula pubescens* litter decomposing at four European field sites. *Plant Ecology*, 154, 27-36. <https://doi.org/10.1023/A:1012965610170>

16. Grammatikopoulos G., Drilias P., Kyparissis A., Petropoulou Y. and Manetas Y. 2001. Reduction of ambient UV-B radiation does not affect growth but may change the flowering pattern of *Rosmarinus officinalis* L. *Plant Ecology*, 154, 119-122. <https://doi.org/10.1023/A:1012964415139>
17. Kyparissis A., Drilias P., Grammatikopoulos G., Petropoulou Y. and Manetas Y. 2001. Effects of UV-B radiation and additional irrigation on the Mediterranean Evergreen Sclerophyll *Ceratonia siliqua* L. under field conditions. *Plant Ecology*, 154, 189-193. <https://doi.org/10.1023/A:1012959219199>
18. Levizou E., Drilias P. & Kyparissis A. 2004. Exceptional photosynthetic performance of *Capparis spinosa* L. under adverse conditions of Mediterranean summer. *Photosynthetica*, 42, 229-235. <https://doi.org/10.1023/B:PHOT.0000040594.85407.f4>
19. Kyparissis A., Grammatikopoulos G. & Manetas Y. 2007. Leaf morphological and physiological adjustments to the spectrally selective shade imposed by anthocyanins in *Prunus cerasifera*. *Tree Physiology*, 27, 849-857. <https://doi.org/10.1093/treephys/27.6.849>
20. Iovi K., Kolovou C. & Kyparissis A. 2009. An ecophysiological approach of hydraulic performance for nine Mediterranean species. *Tree Physiology*, 29, 889-900. <https://doi.org/10.1093/treephys/tpp032>
21. Stagakis S., Markos N., Sykioti O. & Kyparissis A. 2010. Monitoring canopy biophysical and biochemical parameters in ecosystem scale using satellite hyperspectral imagery: An application on a *Phlomis fruticosa* Mediterranean ecosystem using multiangular CHRIS/PROBA observations. *Remote Sensing of Environment*, 114, 977-994. <https://doi.org/10.1016/j.rse.2009.12.006>
22. Sykioti O., Paronis D., Stagakis S. & Kyparissis A. 2011. Band depth analysis of CHRIS/PROBA data for the study of a Mediterranean natural ecosystem. Correlations with leaf optical properties and ecophysiological parameters. *Remote Sensing of Environment*, 115, 752-766. <https://doi.org/10.1016/j.rse.2010.11.003>
23. Markos N. & Kyparissis A. 2011. Ecophysiological modeling of leaf level photosynthetic performance for three Mediterranean species with different growth forms. *Functional Plant Biology*, 38, 314-326. <https://doi.org/10.1071/FP10155>
24. Stagakis S., Markos N., Sykioti O. & Kyparissis A. 2014. Tracking seasonal changes of leaf and canopy light use efficiency in a *Phlomis fruticosa* Mediterranean ecosystem using field measurements and multi-angular satellite hyperspectral imagery. *ISPRS Journal of Photogrammetry and Remote Sensing*, 97, 138-151. <https://doi.org/10.1016/j.isprsjprs.2014.08.012>
25. Stagakis S., Markos N., Vanikiotis T., Tzotsos A., Sykioti O. & Kyparissis A. 2015. sCASE: a primary productivity monitoring system for the forests of North Pindus National Park (Epirus, Greece). *European Journal of Remote Sensing*, 48, 223-243. <https://doi.org/10.5721/EuJRS20154813>
26. Levizou E. & Kyparissis A. 2016. A novel pattern of leaf movement: the case of *Capparis spinosa* L. *Tree Physiology*, 36, 1117-1126. <https://doi.org/10.1093/treephys/tpw059>
27. Cavalaris C., Megoudi S., Maxouri M., Anatolitis K, Sifakis M., Levizou E. & Kyparissis A. 2021. Modeling of Durum Wheat Yield Based on Sentinel-2 Imagery. *Agronomy*, 11(8), 1486. <https://doi.org/10.3390/agronomy11081486>
28. Vanikiotis T., Stagakis S. & Kyparissis A. 2021. MODIS PRI performance to track Light Use Efficiency of a Mediterranean coniferous forest: Determinants, restrictions and the role of LUE range. *Agricultural and Forest Meteorology*, 307, 108518. <https://doi.org/10.1016/j.agrformet.2021.108518>
29. Kyparissis A. and Levizou E. 2022. Climatic Drivers of the Complex Phenology of the Mediterranean Semi-Deciduous Shrub *Phlomis fruticosa* Based on Satellite-Derived EVI. *Plants*, 11, 584. <https://doi.org/10.3390/plants11050584>
30. Bebie M., Cavalaris C. & Kyparissis A. 2022. Assessing Durum Wheat Yield through Sentinel-2 Imagery: A Machine Learning Approach. *Remote Sensing*, 14, 3880. <https://doi.org/10.3390/rs14163880>

31. Stagakis S., Markos N., Vanikiotis T., Levizou E. & Kyparissis A. 2022. Multi-Year Monitoring of Deciduous Forests Ecophysiology and the Role of Temperature and Precipitation as Controlling Factors. *Plants*, 11, 2257. <https://doi.org/10.3390/plants11172257>
32. Demertzioglou M., Genitsaris S., Mazaris D.A., Kyparissis A., Voutsas D., Kozari A., Kormas A.K., Stefanidou N., Katsiapi M., Michaloudi E. & Moustaka-Gouni M. 2022. A catastrophic change in a European protected wetland: From harmful phytoplankton blooms to fish and bird kill. *Environmental Pollution*, 312, 120038. <https://doi.org/10.1016/j.envpol.2022.120038>
33. Katsoulis-Dimitriou S., Lefkaditis M., Bampagiannakos S., Kormas A.K. & Kyparissis A. 2022. Comparison of iCOR and Rayleigh atmospheric correction methods on Sentinel-3 OLCI images for a shallow eutrophic reservoir. *PeerJ*, 10:e14311. <http://doi.org/10.7717/peerj.14311>
34. Arvaniti E., Levizou E. & Kyparissis A. 2023. Near-Zero Temperatures Arrest Movement of the Diaheliotropic *Malva sylvestris*. *Plants* 2023, 12, 2484. <https://doi.org/10.3390/plants12132484>

PUBLICATIONS IN INTERNATIONAL CONFERENCES

1. Stagakis S., Markos N., Levizou E. & Kyparissis A. Montreux, Switzerland, April 23-27, 2007. Forest Ecosystem Dynamics using SPOT and MODIS Satellite Images. European Space Agency ENVISAT Symposium.
2. Kyparissis A., Markos N., Stagakis S., Levizou E., Sykioti O. Florence, Italy, September 17-20, 2007. Ecosystem productivity and dynamics issued from multispectral and hyperspectral satellite imagery. Proceedings of SPIE Europe Remote Sensing. <https://doi.org/10.1117/12.737688>
3. O. Sykioti, Paronis D., Kyparissis A., Stagakis S. Frascati, Italy, 17-19 March, 2010. Spectroscopic analysis of a Mediterranean ecosystem using CHRIS/PROBA, *in situ* leaf spectra and plant measurements. ESA Hyperspectral Workshop, ESA ESRIN.
4. Paronis, D., Sykioti, O., Paronis, D., Kyparissis, A. Frascati, Italy, 17-19 March, 2010. Effect of aerosols on narrowband indices and band depths from CHRIS/PROBA: Case study on a *Phlomis fruticosa* ecosystem. ESA Hyperspectral Workshop, ESA ESRIN.
5. Vanikiotis T., Markos N., Stagakis S., Tzotsos A., Sykioti O., Kyparissis A. Edinburgh, Scotland, September 2013. Estimating light use efficiency of a pine and a beech forest from leaf to ecosystem scale using the photochemical reflectance index. European Space Agency, Special Publication SP-722, Living Planet Symposium.
6. Karamihalaki M., Sykioti O., Stagakis S., Kyparissis A. Thessaloniki, Greece, 22-24 October, 2014. Monitoring of vegetation ecosystems in Greece using vegetation indices time series. Proceedings of the 10th International Congress of the Hellenic Geographical Society.
7. Karamihalaki M., Stagakis S., Sykioti O., Kyparissis A., Parcharidis I. Prague, Czech Republic, 9-13 May, 2016. Monitoring drought effects on Mediterranean conifer forests using SPOT-VEGETATION NDVI and NDWI timeseries. European Space Agency, Special Publication SP-740, Living Planet Symposium.
8. Vanikiotis T., Stagakis S., Kyparissis A. 2018. Effects of satellite spatial resolution on gross primary productivity estimation through light use efficiency modeling. Proceedings of SPIE 10773, Sixth International Conference on Remote Sensing and Geoinformation of the Environment (RSCy2018), 107731R (6 August 2018). <https://doi.org/10.1117/12.2326605>
9. Bebie M., Kyparissis A. Edinburgh, United Kingdom, 16-20 September 2024. A comparative analysis of machine learning and vegetation index-based modeling approaches for durum wheat yield assessment using Sentinel-2 imagery. Proceedings of SPIE Remote Sensing for Agriculture, Ecosystems, and Hydrology XXVI. <https://doi.org/10.1117/12.3031645>

Presentations in Conferences

46 presentations in International and Greek conferences.

CITATIONS

According to [Web of Science](#): 1296 citations, h -index = 21.

According to [Scopus](#): 1379 citations, h -index = 20.