NIKOS NANOS

Aristotle University of Thessaloniki

PROFESSIONAL EMPLOYMENT

2019   Associate Professor, School of Forestry and Natural Environment – Aristotle University of Thessaloniki

2017   Assistant Researcher, Forest Research Institute, Thessaloniki- Greece

2012   Associate Professor, School of Forest Engineering and Natural Environment - Technical University of Madrid

2007   Senior Research Scientist, School of Forest Engineering - Technical University of Madrid

2005   Contractual Research Fellow-*Ramon y Cajal* Program, School of Forest Engineering - Technical University of Madrid

2002   Associate Professor, School of Agriculture and Forest Engineering - University of Valladolid

2001   Lecturer, School of Agriculture and Forest Engineering - University of Valladolid

2001   Post-doctoral research contract, School of Forest Engineering - Technical University of Madrid

EDUCATION

2001   PhD in Forest Engineering - Technical University of Madrid.

1998   M.Sc. in Environmental Studies – CHIEAM / M.A.I.Ch.

1997   B.Sc. in Forestry and Natural Environment - Aristotle University of Thessaloniki

TEACHING EXPERIENCE

SPECIAL COURSES

Nanos, N. and Gonzalo, J. *Spatial data analysis in environmental studies* – TRAGSATEC [2012]

Nanos, N. and Gonzalo, J. *Course on Geo-statistical analysis*, Department of Land Management, School of Natural Resources and Tourism, Polytechnic of Namibia [2010]

Nanos, N. – *Geostatistical analysis with ISATIS and ArcGIS*. University of Valladolid, Post-graduate program in GIS and R/S applied in land-use management [academic years 2004, 2005, 2006, 2007]

POST-GRADUATE COURSES

I. Master of Science in Forestry, School of Forestry and Environmental Engineering, Technical University of Madrid

1. Gil L, Nanos N. Forest tree breeding and conservation of forest genetic resources, 30ECTS [2014, 2015, 2016]

II. MSc in Forest Engineering, School of Agricultural and Forest Engineering, University of Valladolid

1. Nanos, N. - *Species-specific silviculture*, [2001, 2002, 2003, 2004]
2. Reque, J. and Nanos, N. - *Silviculture* [2001, 2002, 2003, 2004]
3. Martínez-Zurimendi P, Nanos N. - *Forest lodging* [2002, 2003, 2004]

III. PhD programs

1. Nanos N. – Applied *Geostatistics*. MEDFOR-ERASMUS MUNDUS at University of Valladolid [2013, 2015]
2. Nanos N. - *Statistical Data Analysis*. University of Valladolid, PhD Program of the School of Agriculture and Forest Engineering [2004, 2005]
3. Nanos N. - *Applied Geostatistics*. University of Valladolid, PhD Program of the School of Agriculture and Forest Engineering [2002, 2003]

UNDER-GRADUATE COURSES

I. **Degree in Environmental Engineering**, School of Forestry and Environmental Engineering - Technical University of Madrid

1. Nanos, N. et al – Conservation Biology*, 30ECTS* [2012, 2013, 2014, 2015]

II. **Degree in Biotechnology**, School of Agricultural Engineering - Technical University of Madrid

2. Nanos, N. Forest production, 30ECTS [2013, 2014, 2015, 2016]

III. **Degree in Forestry Engineering**, School of Forestry and Environmental Engineering - Technical University of Madrid

3. Roig S, Oliet J, Nanos N. Silviculture , 30ECTS [2012]
4. Gil L, Nanos N. Forest Genetics , 30ECTS [2012, 2013, 2014, 2015, 2016]

MANUSCRIPTS

1.   Odumo BO', Nanos N, Carbonell G, Torrijos M, Patel JP, Rodríguez Martín JA. Artisanal gold-mining in a rural environment: Land degradation in Kenya. Land Degrad Dev. 2018;1–9. https://doi.org/10.1002/ldr.3078

2.   Rodríguez Martin, J., Gutiérrez C., Torrijos M, Nanos, N. Wood and bark of Pinus halepensis as archives of heavy metal pollution in the Mediterranean Region. Environmental Pollution, 239: 438-447

3.   Charco J, Venturas M, Gil L, Nanos N (2017). Effective seed dispersal and fecundity variation in a small and marginal population of *Pinus pinaster* Ait. growing in a harsh environment: Implications for conservation of forest genetic resources. *Forests,* 8(9):312, DOI:10.3390/f809031

4.   Nanos N and Sjöstedt-de-Luna, S. (2017). Fitting diameter distribution models to data from forest inventories with concentric plot design. *Forest Systems*, 26(2):e01S., DOI:10.5424/fs/2017262-10486

5.   Charco, J, Perea, R, Gil, L, and Nanos, N. (2016). Impact of deer rubbing on pine forests: implications for conservation and management of *Pinus pinaster* populations. *European Journal of Forest Research*, 135: 719-729

6.   Rodríguez Martin, J., Nanos, N. (2016). Soil as an archive of coal-fired power plant mercury deposition – *Journal of Hazardous Materials*, 308:131-138 (IF= 4.836)

7.   Nanos, N., Grigoratos, T., Rodriguez Martin, J, Samara, C. (2015). Scale-dependent correlations between soil heavy metals and As around four coal-fired power plants of northern Greece. *Stochastic Environmental Research and Risk Assessment,* DOI: 10.1007/s00477-014-0991-3

8.   López de Heredia U, Nanos N, García-del-Rey E, Guzmán P, López R, Venturas M, Gil Muñoz P, Gil L. (2015). High seed dispersal ability of *Pinus canariensis* in stands of contrasting density inferred from genotypic data, *Forest Systems,* 24(1), e015, 13 pages, http://dx.doi.org/10.5424/fs/2015241-06351

9.   Rodriguez Martin, J., Nanos, N., Grigoratos, T., Carbonell, G., & Samara, C. (2014). Local deposition of mercury in topsoils around coal-fired power plants: is it always true? *Environmental Science and Pollution Research*, 21(17), 10205-10214.

10.   Venturas M, Fuentes-Utrilla P, López R, Perea R, Fernández V, Gascó A, Guzmán P, Li M, Rodríguez-Calcerrada J, Miranda E, Domínguez J, González-Gordaliza G, Zafra E, Fajardo-Alcántara M, Martín JA, Ennos R, Nanos N, Lucena JJ, Iglesias S, Collada C, Gil L (2014). Ulmus laevis in the Iberian Peninsula: a review of its ecology and conservation. *iForest-Biogeosciences and Forestry*, doi: 10.3832/ifor1201-008.

11.   Venturas M, Nanos N, Gil L. 2014. The reproductive ecology of *Ulmus laevis* Pallas in a transformed habitat – *Forest Ecology and Management*, 312, 170-178

12.   Juez L, González-Martínez SC, Nanos N, Lucas de AI, Ordóñez C, Peso del C, Bravo F. 2014. Can seed production and restricted dispersal limit recruitment in *Pinus pinaster* Aiton from the Spanish Northern Plateau? – *Forest Ecology and Management*, 313, 329:339

13.   Cristóbal D, Martínez-Zurimendi P, Villamediana I, Ciriza J, Villar J, Nanos N, Sierra-de-Grado R. 2014. Clonal structure and dynamics of peripheral Populus tremula L. populations - *iForest - Biogeosciences and Forestry*, 7: 140-149

14.	Rodriguez Martin, JA., Nanos, N., Miranda, JC, Carbonell, G, Gil, L. 2013 Volcanic mercury in *Pinus canariensis* – *Naturwissenschaften- The Science of Nature*, 100: 739–747, DOI: 10.1007/s00114-013-1070-1

15.	Millerón, M., López de Heredia, U., Lorenzo, Z., Dounavi, A., Alonso, J., Gil, L., Nanos, N. 2013. Assessment of spatial discordance of primary and effective seed dispersal of European beech (*Fagus sylvatica* L.) by ecological and genetic methods – *Molecular Ecology, 22: 1531-1545*

16.	Rodriguez Martin JA., Carbonell G., Nanos N., Gutiérrez , C. 2013. Source identification of soil mercury in Spanish islands – *Archives of Environmental Contamination and Toxicology, 64: 171-179*

*17.	Millerón, M., López de Heredia, U., Lorenzo, Z., Perea, R. Alonso, J., Gil, L., Nanos, N. 2012. Effect of canopy closure on pollen dispersal in a wind pollinated species (Fagus sylvatica L.) - Plant Ecology, 213: 1715-1728*

18.	Nanos, N. and Rodríguez Martin, JA. 2012. Multiscale analysis of heavy metal contents in soils: spatial variability in the Duero river basin (Spain), *Geoderma, 189-190: 554-562*

19.	Rodríguez-Calcerrada, J., Nanos, N., del Rey, M.C., López de Heredia, U., Gil, L. 2011. Small-scale variation of vegetation in a mixed forest understory is partly controlled by the effect of overstory composition on litter accumulation - *Journal of Forest Research, 16: 473-483*

20.	Rodríguez-Calcerrada, J., Nanos, N. and Aranda, I. 2011. The relevance of seed size in modulating leaf physiology and early plant performance in two tree species – *Trees: Structure and Function*, 25: 873-884

21.	Bravo, F., Álvarez, JG,. del Rio, M., Barrio, M., Bonet, JA., Bravo-Oviedo, A., Calama, R., Castedo, F., Crecente-Campo, F., Condés, S., Diéguez, U., González-Martínez, SC., Lizarralde, I., Nanos, N., Madrigal, M., Martínez-Millán, FJ., Montero, G., Ordóñez, C., Palahí, M., Piqué, M., Rodríguez, F., Rodríguez, R., Rojo, A., Ruiz-Peinado, R., Sánchez-González, M., Trasobares, A., Vázquez, J. 2011. Growth and yield models in Spain: Historical overview, contemporary examples and perspectives - *Forest systems* 20 (2): 315-328

*22.	Garcia-del-Rey, E., Nanos, N., López-de-Heredia, U., Gil Muñoz, P., Otto, R., Fernández-Palacios, JM. and Gil, L. 2011. Spatiotemporal variation of a Pinus seed rain available for an endemic finch in an insular environment - European Journal of Wildlife Research* 57: 337-347

23.	Nanos, N., Larson, K., Millerón, M. and Sjöstedt-de-Luna, S. 2010. Inverse modeling for effective dispersal: Do we need tree size to estimate fecundity? - *Ecological Modelling 221: 2415-2424*

24.	Garcia-del-Rey, E., Gil, L., Nanos, N., López-de-Heredia, U., Muñoz, P. G. and Fernandez-Palacios, J. M. 2009. Habitat characteristics and seed crops used by Blue Chaffinches *Fringilla teydea* in winter: implications for conservation management. - *Bird Study 56: 168 - 176*

25.	Rodríguez, J., Nanos, N., Grau, J., Gil, L. and López-Arias, M. 2008. Multiscale analysis of heavy metal contents in Spanish agricultural topsoils - *Chemosphere 70: 1085-1096*

26.	González-Martínez, S., Burczyk, J., Nathan, R., Nanos, N., Gil, L. and Alía, R. 2006. Effective gene dispersal and female reproductive success in Mediterranean maritime pine (*Pinus pinaster* Aiton) - *Molecular Ecology 15 4577–4588*

27.   Nanos, N., Pardo, F., Alonso, J., Pardos, J. and Gil, L. 2005. Using multivariate factorial kriging for multiscale ordination: A case study - *Canadian Journal of Forest Research 35: 2860-2874*

28.   Martin-Pinto, P., Pajares, J. A., Nanos, N. and Diez, J. J. 2004. Site and seasonal influences on the fungal community on leaves and stems of Pinus *and* Quercus *seedlings in forest nurseries - Sydowia 56: 243-257*

29.   Nanos, N., Calama, R., Montero, G. and Gil, L. 2004. Geostatistical prediction of height/diameter models - *Forest Ecology and Management 195: 221-235*

30.   Nanos, N., González Martínez, S. C. and Bravo, F. 2004. Studying within-stand structure and dynamics with geostatistical and molecular marker tools - *Forest Ecology and Management 189: 223-240*

31.   Gil, L., Climent, J., Nanos, N., Mutke, S., Ortiz, I. and Schiller, G. 2002. Cone morphology variation in *Pinus canariensis* Sm. - *Plant Systematics and Evolution 235: 35-51*

32.   Nanos, N. and Montero, G. 2002. Spatial prediction of diameter distribution models - *Forest Ecology and Management 161: 147-158*

33.   Nanos, N., Tadesse, W., Montero, G., Gil, L. and Alia, R. 2001. Spatial stochastic modeling of resin yield from pine stands - *Canadian Journal of Forest Research 31: 1140-1147*

34.   Tadesse, W., Nanos, N., Auñon, F. J., Alia, R. and Gil, L. 2001. Evaluation of high resin yielders of *Pinus pinaster* Ait. - *Forest Genetics 8: 271-278*

35.   Nanos, N., Tadesse, W., Montero, G., Gil, L. and Alia, R. 2000. Modelling resin production distributions for *Pinus pinaster* Ait. using two probability functions - *Annals of Forest Science 57: 369-377*

BOOKS & BOOK CHAPTERS

Nanos, N. and Rodríguez Martín, JA. 2012. Using a multi-scale geostatistical method for the source identification of heavy metals in soils, In: Panagiotaras, D. (ed.), Geochemistry. InTech – Open Access Publisher, ISBN 978-953-308-2-4

Bravo, F., Álvarez, JG,. del Rio, M., Barrio, M., Bonet, JA., Bravo-Oviedo, A., Calama, R., Castedo, F., Crecente-Campo, F., Condés, S., Diéguez, U., González-Martínez, SC., Lizarralde, I, Nanos, N., Madrigal, M., Martínez-Millán, FJ., Montero, G., Ordóñez, C., Palahí, M., Piqué, M., Rodríguez, F., Rodríguez, R., Rojo, A., Ruiz-Peinado, R., Sánchez-González, M., Trasobares, A., Vázquez, J. 2011. Growth and yield models in Spain: Historical overview, contemporary examples and perspectives – insituto Universitario de investigación en Gestión Forestal sostenible (Universidad de Valladolid-INIA) and Unidad de Gestión Forestal sostenible (Universidad de Santiago de Compostela)- 72 pp., ISBN 978-84-615-7145-1

Gil, L., Alonso, J., Aranda, I., González Doncel, I., Gonzalo Jiménez, J., López de Heredia, U., Milleron, M., Nanos, N., García Calvo, R., Rodríguez Calcerrada, J. and Valbuena-Carabaña, M. 2010. *El hayedo de Montejo. Una gestión sostenible*. - Consejería de Medio Ambiente Vivienda y Ordenación del Territorio, Comunidad de Madrid, 152 pp., ISBN 978-84-451-3218-0

Nanos, N., Calama, R., Cañadas, N. and Montero, G. 2003. Spatial stochastic modeling of cone production from stone pine (*Pinus pinea* L.) stands in two regions of Spain. - *In*: Amaro, A., Reed, D. and Soares, P. (eds.), *Modelling Forest Systems*. CABI Publishing, pp. 131-142, ISBN-10: 0851996930; ISBN-13: 978-0851996936

Nanos, N., Montero, G. and Gil, L. 2000. Análisis espacial de los datos del inventario forestal nacional utilizando técnicas geoestadísticas. *In*: Bravo, F., del Rio, M. and del Peso, C. (eds.), *El inventario forestal nacional. Elemento clave para la gestión forestal sostenible*. Fundación General de la Universidad de Valladolid, pp. 149-158. ISBN: 84-600-9803-6

SPONSORED RESEARCH

Principal Investigator

Nanos, N. Performing some tasks of the research project: "Ecological risk of priority contaminants in an insular environment. Assessment of spatio-temporal patterns and impacts on soil biodiversity". Spanish National Research Council (CSIC), 2015-2018.

Nanos, N. and Samara, C. Modeling wind-dispersal and soil-deposition of heavy metals emitted from the coal-fired power-generating industry. Project JC2010-0109, Human Resources Mobility Program, Spanish Ministry of Education, 2010

Nanos, N., López de Heredia, U., Dounavi, A. and Gil, L. Seed dispersal in a mixed-species forest of Montejo: introducing geostatistics and genetics in classical seed dispersal models, Project AGL2006-00813, Non-guided fundamental-research projects, Spanish Ministry of Science and Technology, 2006 – 2009

Nanos, N. and Sjöstedt-de-Luna, S. Adapting the EM. algorithm for estimating seed dispersal and the diameter distribution of forest stands, Project JC2007-00258, National Human Resources Mobility Program, Spanish Ministry of Education, 2008

Nanos, N., López de Heredia, U., Dounavi, A. and Gil, L. Seed dispersal in a mixed-species forest of Montejo: introducing geostatistics and genetics in classical seed dispersal models, Project PTA2007-0359, Technical support staff program, Spanish Ministry of Science and Technology, 2007 – 2010

Nanos, N., López de Heredia, U., Gil, L and Aranda, I. The role of seed dispersal and safe-site limitation in natural regeneration of mixed Quercus pyrenaica - Quercus petraea stands, Project CCG07-UPM/AMB-1865, Prefecture of Madrid, Regional Funding Program for Applied Research, 2008-2009

Nanos, N. Geostatistical forest growth-and-yield models, Project RyC2004-001013, National Program for Recruitment and Incorporation of Human Resources, Spanish Ministry of Science and Technology, 2005-2007

Nanos, N. and Montes, F. Development of a software tool for a growth model of *Pinus sylvestri*s stands, Funding: National Institute for Agricultural Research, 2008

Research group member

Gutiérrez Martin, C et al. Ecological risk of priority contaminants in an insular environment. Assessment of spatio-temporal patterns and impacts on soil biodiversity (CGL2013-43675P), Spanish National Program for Fostering Excellence in Scientific and Technical Research, 2014-2018

Montes, F. et al. [7 participants]. ESTEREOFOR: Development of techniques for forest structural diversity assessment using hemispherical photography: a new monitoring tool for forest management - R+D projects of the Organism for National Parks, Spanish Ministry of Natural, Rural and Marine Environment, 2011 - 2013

Gil, L. Nanos, N. López-de-Heredia, U, Soto, A., Collada, C, Pita, P. and López-Rodriguez, R. Adaptive traits of *Pinus canariensis* Sm. to volcanism, Project AGL2009-10606, Non-guided fundamental-research projects, Spanish Ministry of Science and Technology, 2010 – 2012

Gil, L. et al. [22 participants]. Regeneration of forest systems of the prefecture of Madrid. Project S2009/AMB1668, Department of Education, Prefecture of Madrid, 2009-2012

Kremer, A. et al. [several participants] EVOL-TREE: Evolution of trees as drivers of terrestrial biodiversity, UE. Network of Excellence Nº 016322

Gonzalo-Jiménez, J. and Nanos, N. Educational material for the course GSA220S on Geo-statistical Data Analysis - Bachelor Degree in Geo-information Technology of the Polytechnic University of Namibia, Funded by ESRI - España, 2008-2009

Participation in 15 research projects (project list is omitted)

CONFERENCE PRESENTATIONS & POSTERS

Venturas M., López R., Perea R., Fernández V., Fuentes-Utrilla P., Gascó A.(3), Guzmán P., Li M., Rodríguez-Calcerrada J., Miranda E., Domínguez J., González G., Zafra E., Fajardo-Alcántara M., Martín J.A., Ennos R., Nanos N., Lucena J.J., Iglesias S., Collada, C., Gil L. 2013. *Ulmus laevis* Pallas a native elm in the Iberian Peninsula: a multidisciplinary approach. *Third International Elm Conference 2013: The elm after 100 years of Dutch elm disease*, [Florence 9-11 October 2013]

Miranda JC, Nanos N, Gil L 2013. Dinámica de la recuperación de una masa de pino canario (*Pinus canariensis*) tras una erupción volcánica. *Sexto Congreso Forestal Español* [Vitoria-Gasteiz 10-14 Junio 2013], <u>ISBN: 978-84-937964-9-5</u>

Nanos, N, Miranda, JC, Gonzalez-Doncel, I, Gonzalo, J, Rodriguez-Martin, JA, Gil, L. 2011. A pine species surviving after volcanic eruptions. *MEDPINE-4: 4th International conference on Mediterranean pines* [Avignon, France, 8-10 June 2011]

Lopez de Heredia, U., López RA, Guzmán, P., Nanos, N., Garcia-delRey, E., Gil Muñoz, P., Gil, L. 2011. Local variability of serotinous cones in Canary Islands pine (Pinus canariensis) stand, *MEDPINE-4: 4th International conference on Mediterranean pines* [Avignon, France, 8-10 June 2011]

Rodríguez Martín, JA., Nanos, N., Carbonel Martín, G., Grau Corbí, JM 2010. Spatial mercury distribution in Spanish islands soil. Geostatistic technique to evaluate mercury input, SETAC Asia/Pacific Joint Conference, *International Conference on Environmental Pollution*, Restoration, and Management, Ho Chi Min City, Vietnam

Rodríguez Martín,J.A., Nanos, N., Carbonel Martín, G., Grau Corbí, J.M. 2010. Mercury soil pollution on Spanish islands: Methods to assess Hg input, *19th World Congress of Soil Science, Soil Solutions for a Changing World*, Brisbane, Australia [August 1-6, 2010]. Proceedings: Soil solutions for a changing world. International Union of Soil Sciences, ISBN 978-0-646-53783-2

Millerón, M., Lopez De Heredia, U., Gil, L., Nanos, N. 2009. Dispersión de semillas en una población marginal de Fagus sylvatica L. en Montejo de la Sierra (Madrid, España), FAO XIII *Word Forestry Congress*, Buenos Aires, Argentina

Nanos, N., López de Heredia, U., Lorenzo, Z., Alonso, J., Navarro, J., Aranda, I., Gil, L. 2007. El Hayedo de Montejo (Madrid): a beech population in the southern-most limit of the distribution, COST-ACTION E52: *Evaluation of beech genetic resources for sustainable forestry*, Berlin, Germany

Sierra de Grado, R., Villamediana, I., Ciriza, J., Villar, J., Cristóbal, D., Nanos, N., Martízez Zurimendi, P. 2006 Clonal structure of three wild Populus tremula L. populations in Spain. IUFRO *Population genetics and genomics of forest Trees Conference*. Alcalá de Henares, Spain - October 1st-6th.

Nanos, N. 2003. Krigeaje de indicatrices: un método geoestadístico útil para la predicción espacial de variables de interés forestal, *Reunión del grupo de trabajo sobre modelización forestal de la SECF*, Palencia SPAIN

Sebastián-López, A., Nanos, N., Calle-Montes, A., 2003. Predicción del tamaño esperado de incendios en España mediante la función Weibull, *Reunión del grupo de trabajo sobre modelización forestal de la SECF*, Palencia SPAIN

Nanos, N., Calama, R., Cañadas, N., Montero, G., 2002. Spatial stochastic modeling of cone production from stone pine (*Pinus pinea* L.) stands in two regions of Spain, IUFRO meeting, *Reality, models and parameter estimation. The forestry scenario*, Sesimbra, Portugal

Nanos, N., Montero, G. 2001. Spatial prediction of diameter distribution models in forestry, INRA - geoENV III- Geostatistics for environmental applications, Avignon, France. Publication: Monestiez, P.; Allard, D.; Froidevaux, R. (Eds.), 2001. geoENV III - Geostatistics for Environmental Applications, 555 pp., Springer, ISBN 978-0-7923-7106-9

Nanos, N., Montero, G., Gil, L 2001. Análisis espacial de los datos del inventario forestal nacional utilizando técnicas geoestadísticas, *El inventario forestal nacional. Elemento clave para la gestión forestal sostenible*, Palencia, Spain

AWARDS

2002   Distinguished PhD-thesis, Technical University of Madrid

2004   Distinguished research scientist abroad, Greek Ministry of Defense

SHORT STAYS

01/03/2008 - 01/07/2008   Department of Mathematics and Mathematical Statistics, Umea University, Sweden [with Prof. Sara Sjöstedt-de-Luna]

01/12/2010 - 01/06/2011   Environmental Pollution Control Laboratory, Department of Chemistry, Aristotle University of Thessaloniki-Greece [with Prof. Constandini Samara]

SERVICE ACTIVITIES

Subject editor

Forest systems

Manuscript Reviews

Forest Ecology and Management, Journal of Environmental Management, Forests, International Journal of Environmental Research and Public Health, Stochastic Environmental Research and Risk Assessment, PLOSONE, Environmental Pollution, Journal of Ecology, Landscape and Urban Planning, Central European Journal of Geosciences, Science of the Total Environment, Forest Systems, Journal of Forest Research, Turkish Journal of Agriculture and Forestry, Environmental Monitoring and Assessment, African Journal of Agricultural Research, Water