Remote sensing and fungal yields: a new approach

Raquel Martínez Rodrigo
raquel.martinez@fora.es

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The importance of mushrooms:

medicinal

commercial

nutritional

recreational

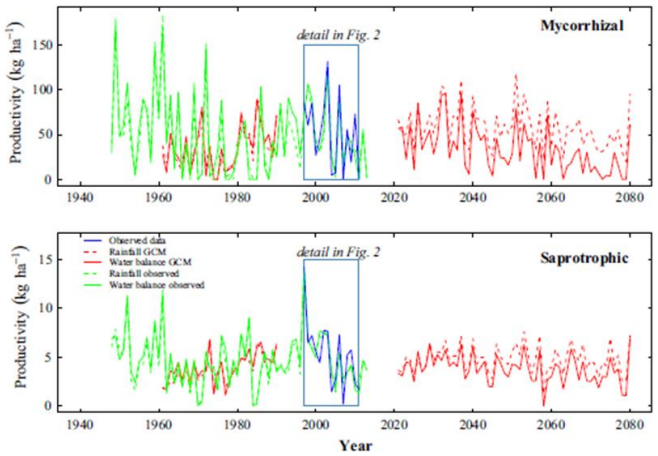
Global Change Biology

Primary Research Article

Increased evapotranspiration demand in a Mediterranean climate might cause a decline in fungal yields under global warming

Teresa Ágreda, Beatriz Águeda, José M. Olano, Sergio M. Vicente-Serrano, Marina Fernández-Toirán

First published: 30 April 2015 | https://doi.org/10.1111/gcb.12960 | Cited by: 10



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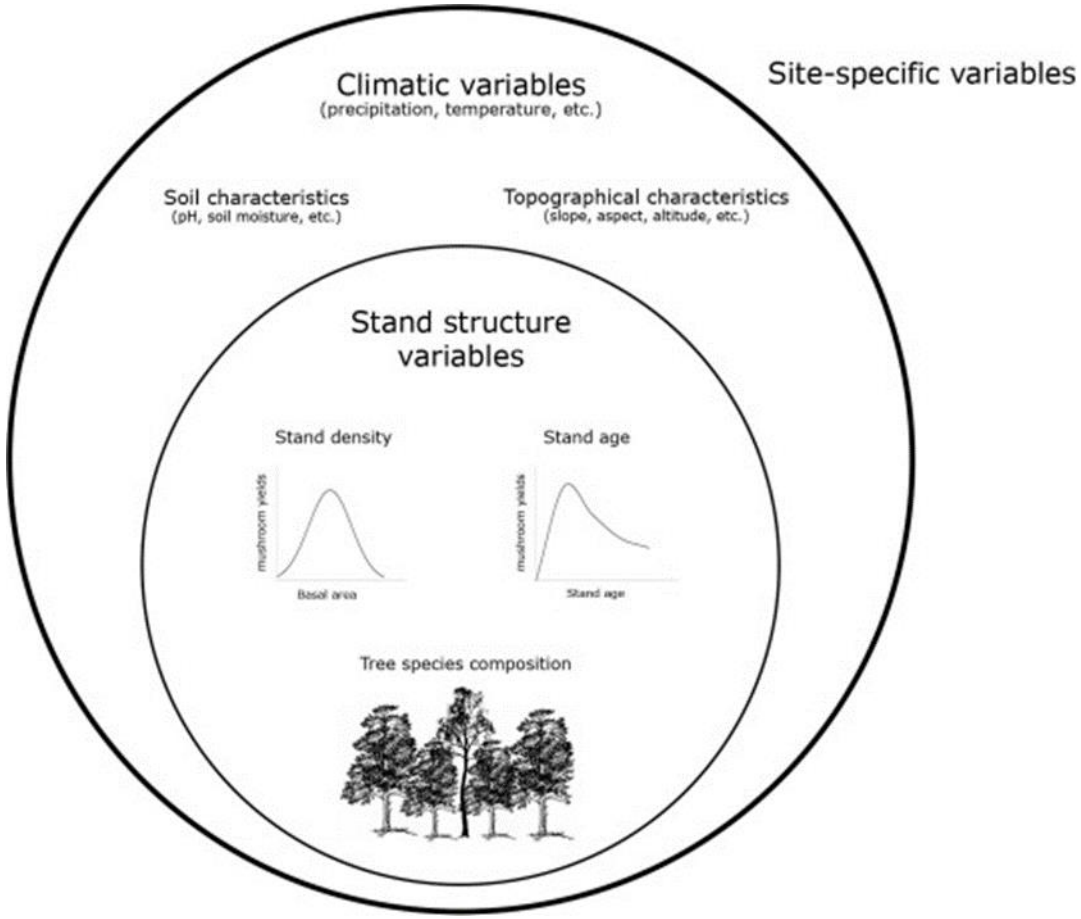
ELSEVIER
Forest Ecology and Management
Volume 402, 15 October 2017, Pages 102-114

Is silviculture able to enhance wild forest mushroom resources? Current knowledge and future perspectives

Antonio Tomao [a], José Antonio Bonet [b, c], Juan Martínez de Aragón [c], Sergio de-Miguel [b]



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Site-specific variables:

Climatic variables:

AEMet
Agencia Estatal de Meteorología

remote sensing

MDPI

Article

An Improved Single-Channel Method to Retrieve Land Surface Temperature from the Landsat-8 Thermal Band

Jordi Cristóbal [1,2,*], Juan C. Jiménez-Muñoz [3], Anupma Prakash [2], Cristian Mattar [4], Dražen Skoković [3] and José A. Sobrino [3]

1 Asiaq—Greenland Survey, Postbox 1003, 3900 Nuuk, Greenland
2 Geophysical Institute, University of Alaska Fairbanks, 903 Koyukuk Dr., Fairbanks, AK 99775-7320, USA; aprakash@alaska.edu
3 GCU/IPL, University of València, Catedrático José Beltrán 2, 46980 Paterna Valencia, Spain; jcjm@uv.es (J.C.J.-M.); drazen.skokovic@uv.es (D.S.); Jose.Sobrino@uv.es (J.A.S.)
4 Universidad de Aysén, Obispo Vielmo 62, 5950000 Coyhaique, Chile; Cristian.mattar@uaysen.cl
* Correspondence: jcr@asiaq.gl; Tel.: +299-34-88-01

Received: 6 February 2018; Accepted: 7 March 2018; Published: 10 March 2018

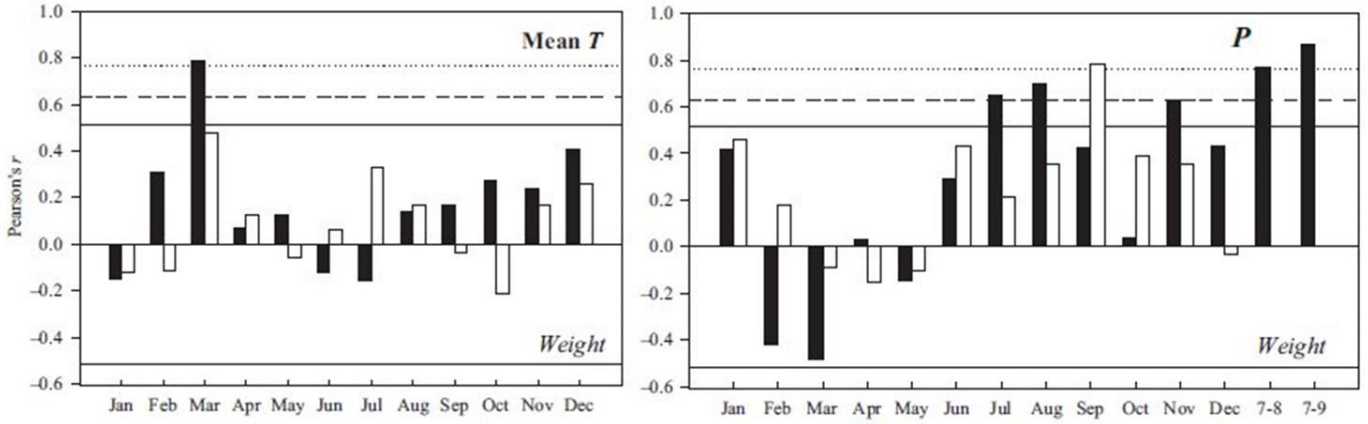
Global Change Biology

Primary Research Article

Increased evapotranspiration demand in a Mediterranean climate might cause a decline in fungal yields under global warming

Teresa Ágreda, Beatriz Águeda, José M. Olano, Sergio M. Vicente-Serrano, Marina Fernández-Toirán

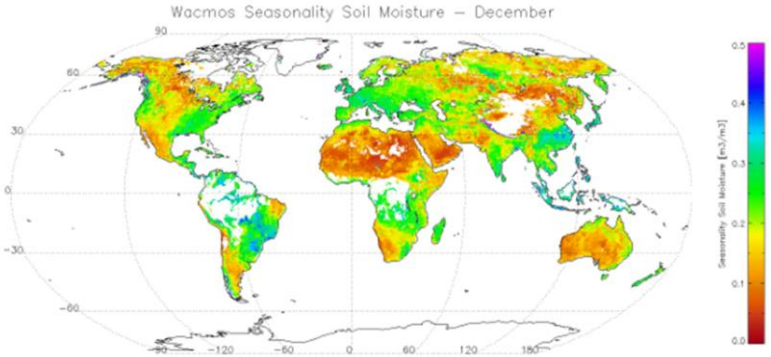
First published: 30 April 2015 | https://doi.org/10.1111/gcb.12960 | Cited by: 10



Site-specific variables:

Soil characteristics:

ESA CCI SOIL MOISTURE



1. dielectic constant
2. surface roughness

Available online at www.sciencedirect.com
SCIENCE DIRECT
Remote Sensing of Environment 90 (2004) 178–189
Remote Sensing of Environment
www.elsevier.com/locate/rse
ELSEVIER

Soil moisture estimation in a semiarid rangeland using ERS-2 and TM imagery

Cuizhen Wang[a,*], Jiaguo Qi[a], Susan Moran[b], Robin Marsett[b]

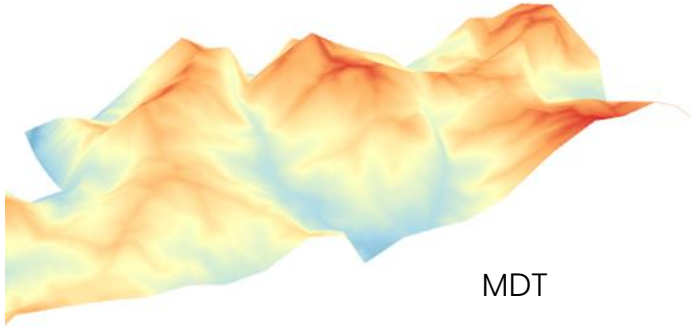
[a] Centre for Global Change and Earth Observations and Department of Geography, Michigan State University, 101 Manly Miles Building, 1405 South Harrison Road, East Lansing, MI 48823, USA
[b] USDA-ARS Southwest Watershed Research Centre, 2000 E. Allen Rd., Tucson, AZ 85719, USA

Received 23 June 2003; received in revised form 3 December 2003; accepted 6 December 2003

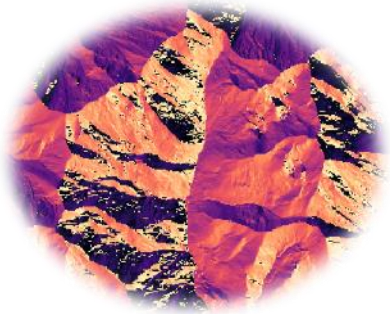
Site-specific variables:

Topographical characteristics:

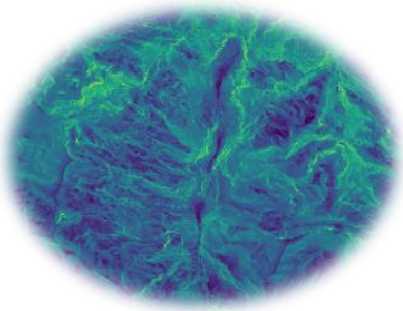
- LiDAR
- radar interferometry
- IGN



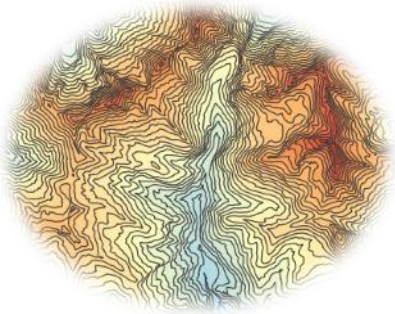
MDT



aspect



slope



altitude

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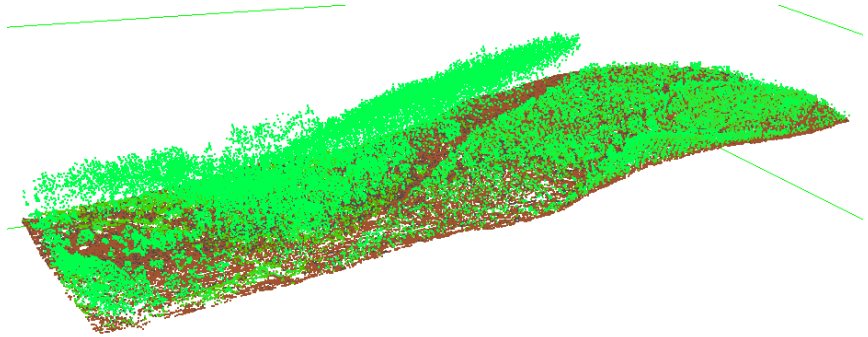
Stand structure variables:

Stand age, stand density and tree species composition:



Mycorrhiza
DOI 10.1007/s00572-013-0522-y

ORIGINAL PAPER

Age class influence on the yield of edible fungi in a managed Mediterranean forest

Teresa Ágreda · Óscar Cisneros · Beatriz Águeda · Luz Marina Fernández-Toirán

Received: 25 June 2013 / Accepted: 6 August 2013
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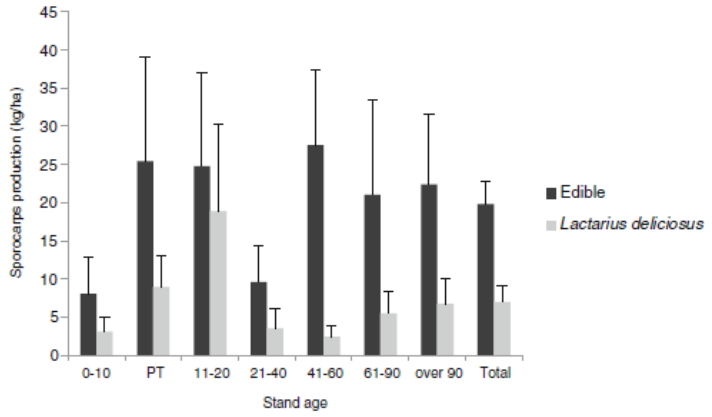
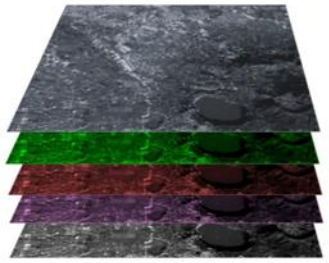
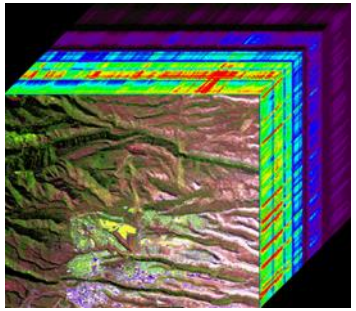
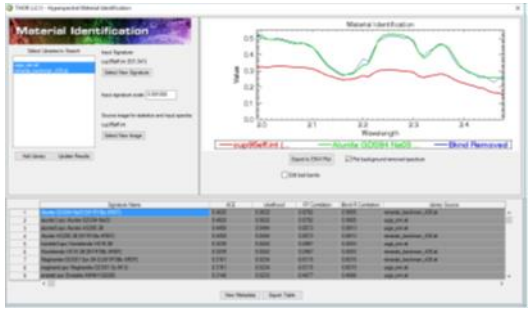




multispectal imagen



hyperspectral imagen



spectral library

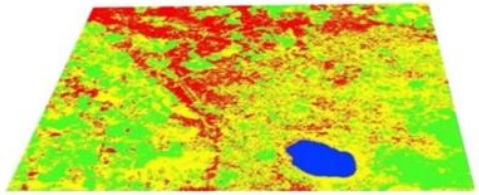
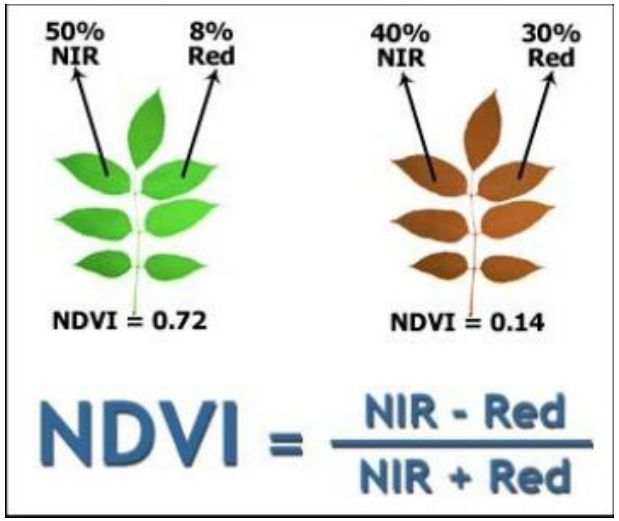


image classification

Variables:

Spectral index:



Winter

Spring

Summer

Fall

https://www.indexdatabase.de/

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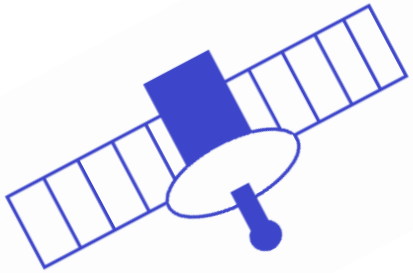
Mushroom harvest prediction:

data time series



remote sensing

weather data

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Agricultural and Forest Meteorology 288–289 (2020) 108015

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Agricultural and Forest Meteorology

journal homepage: www.elsevier.com/locate/agrformet

Primary productivity and climate control mushroom yields in Mediterranean pine forests

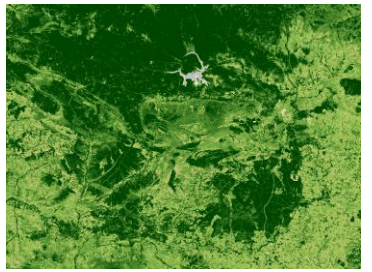
José Miguel Olano[a,*], Raquel Martínez-Rodrigo[a,b], José Miguel Altelarrea[c], Teresa Ágreda[d], Marina Fernández-Toirán[a], Ana I. García-Cervigón[e], Francisco Rodríguez-Puerta[a,b], Beatriz Águeda[a,b]

climate data

Soil moisture data

mushroom yields

results



NDVI data

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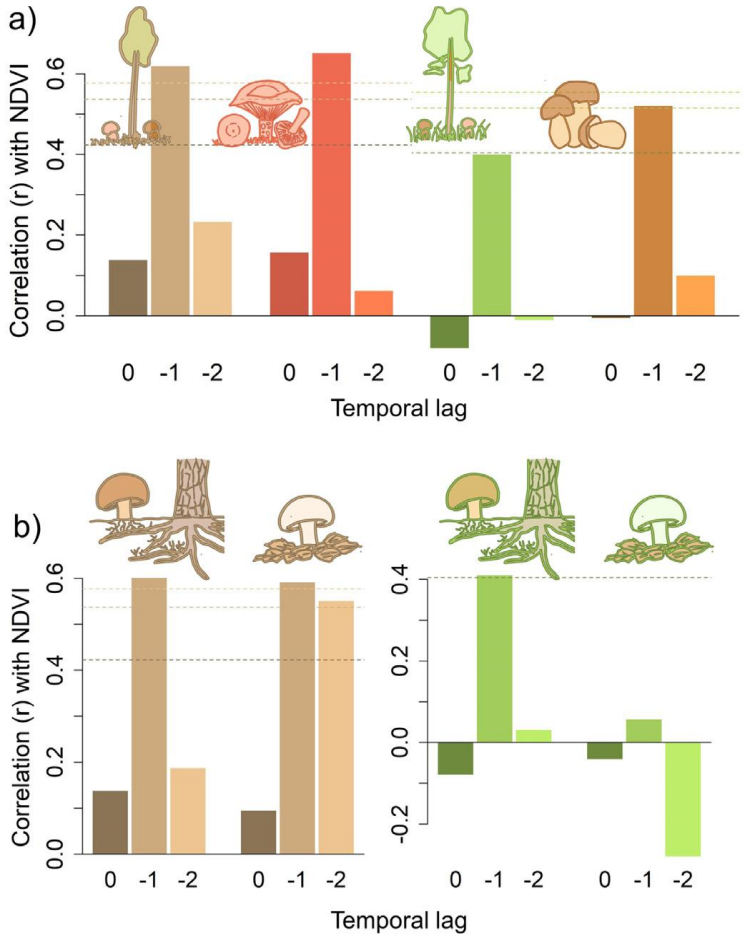
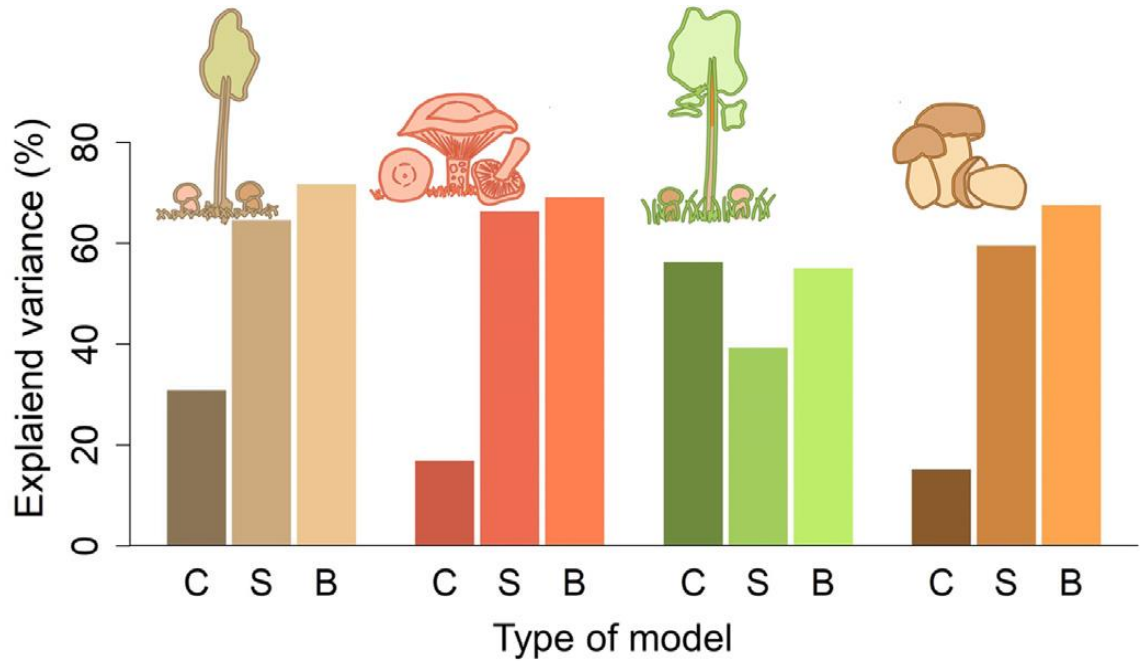
NDVI



Global models:



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Coordinator

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