
"Understanding the past, assessing the present and inspiring the future of Mediterranean forests"
FOREST SCIENCES CENTRE OF CATALONIA
NEWFORESTS kick-off meeting – Montréal – February, 2014

FOREST SCIENCES CENTRE OF CATALONIA

A Centre for research, training and knowledge transfer

CTFC is a **public body** doing

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CENTER FOR MEDITERRANEAN FOREST RESEARCH

CEMFOR is a new research initiative established by the CTFC to catalyze innovative and collaborative research on forest science in a context of large-scale global changes.

Objectives

- Increasing the impact and visibility of forest research developed at CTFC.

- To promote the linkage between forest research and society demands.

- The promotion and leadership of new, strategic, international forest research networks.

Members

Lluís Brotons
Biodiversity, spatial ecology, landscape modelling

Lluís Coll
Forest ecology, disturbance dynamics, adaptive management

José Antonio Bonet
Mycosilviculture, fungal productivity and diversity

José Ramón González Olabarria
Forest managment and planning, forest disturbances, forest inventory

Pere Rovira
Soil science, forest soils, soil organic matter, soil fertility, land use, carbon cycle

Pere Casals
Plant and soil relationships; plant ecology; C and N dynamics; understory prescribed fires; shrub ecosystems management

Miquel de Cáceres
Landscape simulation modelling, plant beta diversity

Research axes

1. Understanding how historical processes have affected forest ecosystems and shape their current state (past)

2. Assessing the response of current forest ecosystem to the different drivers of change (present)

3. Imagining the future by developing integrative forest ecosystem assessments under sound future socioeconomic and environmental scenarios (future)

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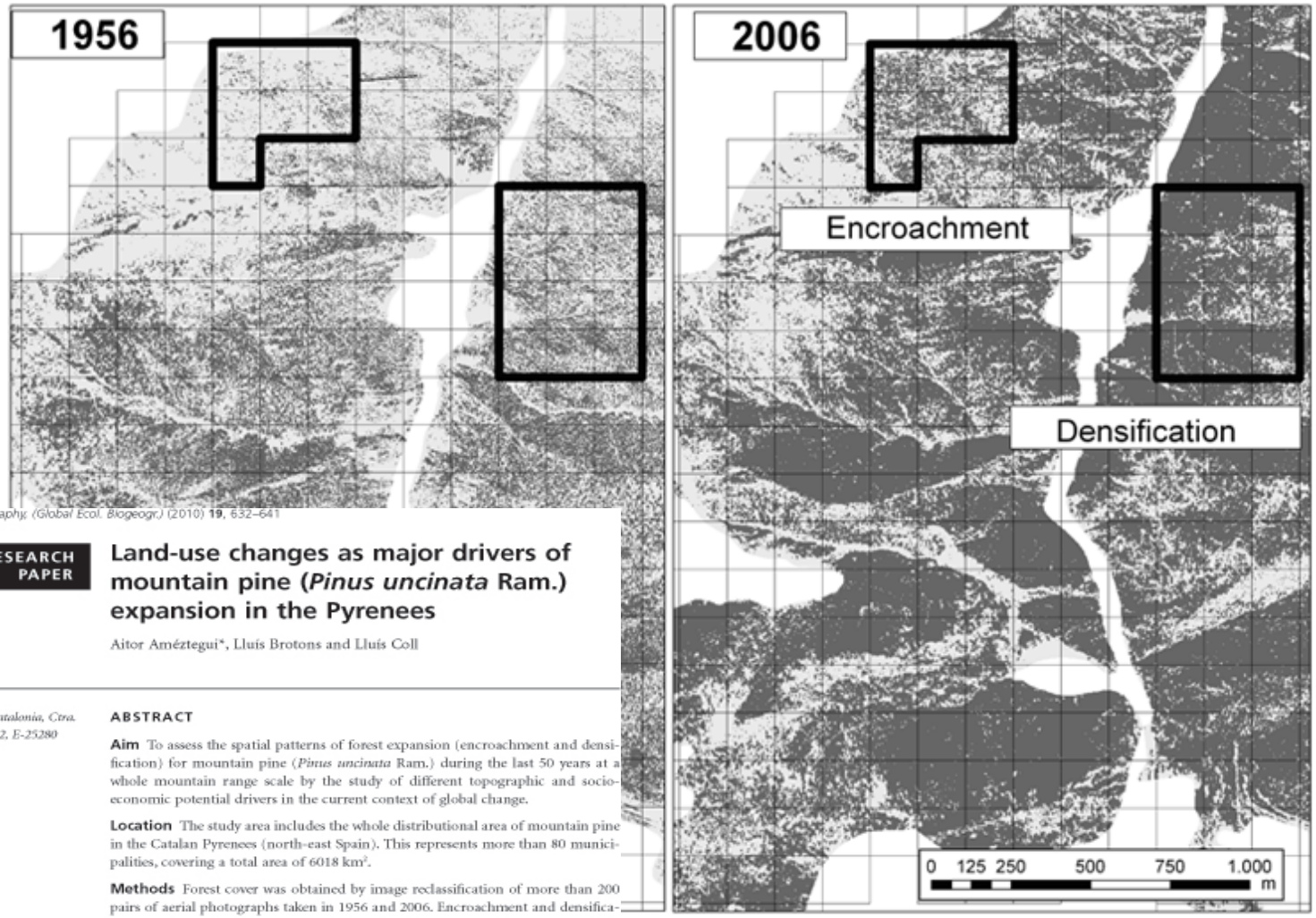
Understanding how historical processes have affected forest ecosystems and shape their current state (1/3)

Forest expansion during the last decades



Global Ecology and Biogeography, (Global Ecol. Biogeogr.) (2010) **19**, 632–641

A Journal of Macroecology

RESEARCH PAPER

Land-use changes as major drivers of mountain pine (*Pinus uncinata* Ram.) expansion in the Pyrenees

Aitor Améztegui*, Lluís Brotons and Lluís Coll

Forest Technology Centre of Catalonia, Ctra. Sant Llorenç de Morunys, km.2, E-25280 Solsona, Spain

ABSTRACT

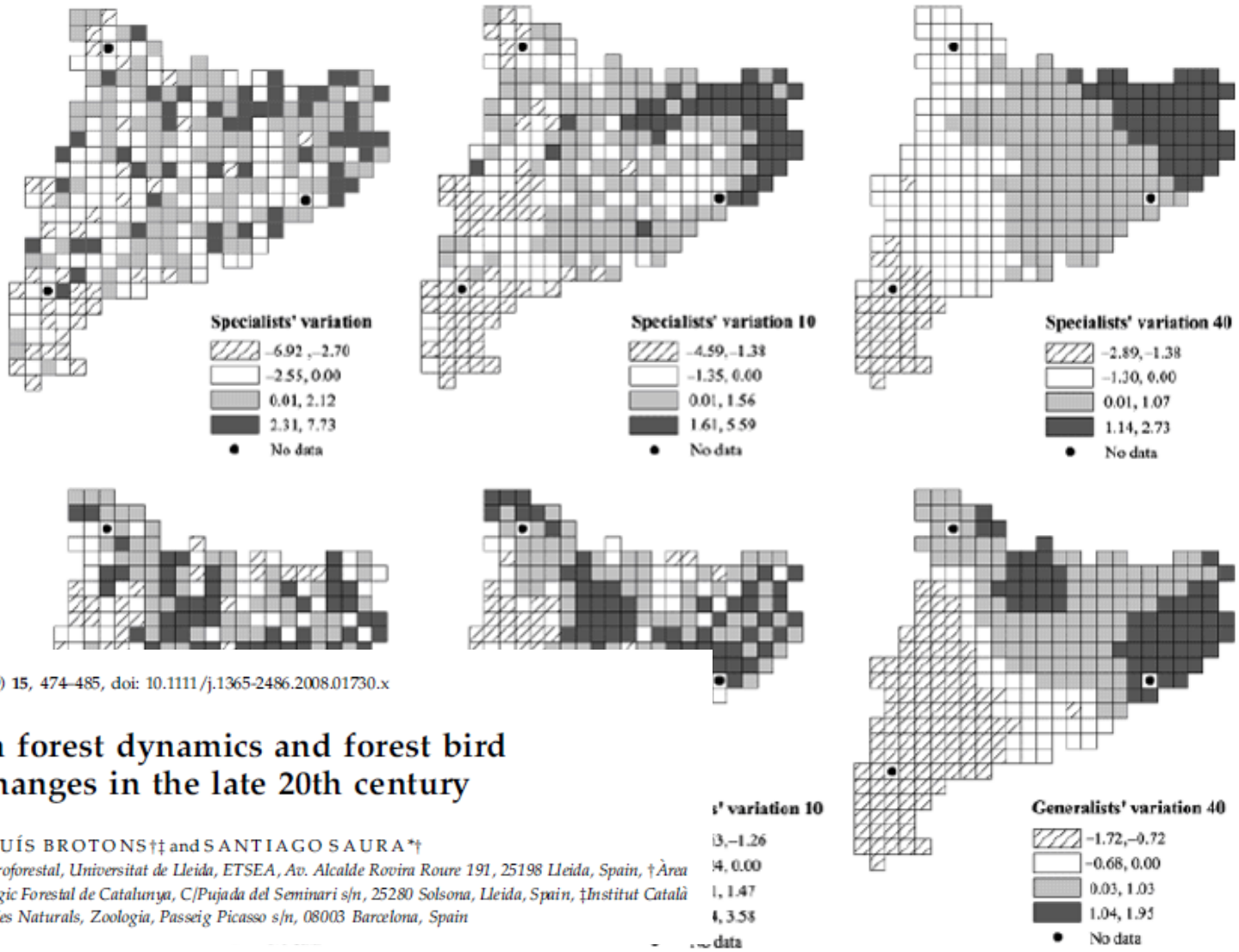
Aim To assess the spatial patterns of forest expansion (encroachment and densification) for mountain pine (*Pinus uncinata* Ram.) during the last 50 years at a whole mountain range scale by the study of different topographic and socio-economic potential drivers in the current context of global change.

Location The study area includes the whole distributional area of mountain pine in the Catalan Pyrenees (north-east Spain). This represents more than 80 municipalities, covering a total area of 6018 km².

Methods Forest cover was obtained by image reclassification of more than 200 pairs of aerial photographs taken in 1956 and 2006. Encroachment and densifica-

Understanding how historical processes have affected forest ecosystems and shape their current state (2/3)

Bird distribution changes



Global Change Biology (2009) **15**, 474–485, doi: 10.1111/j.1365-2486.2008.01730.x

Mediterranean forest dynamics and forest bird distribution changes in the late 20th century

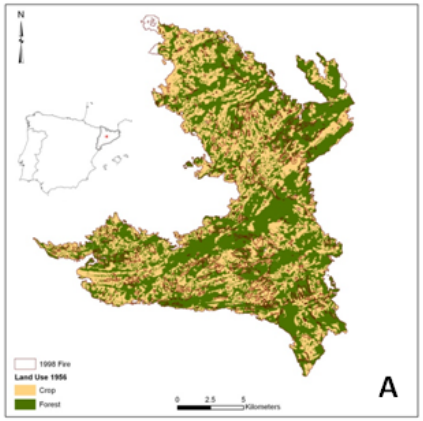
ASSU GIL-TENA*, LLUÍS BROTONS†‡ and SANTIAGO SAURA*†

*Departament d'Enginyeria Agroforestal, Universitat de Lleida, ETSEA, Av. Alcalde Rovira Roure 191, 25198 Lleida, Spain, †Àrea de Biodiversitat, Centre Tecnològic Forestal de Catalunya, C/Pujada del Seminari s/n, 25280 Solsona, Lleida, Spain, ‡Institut Català d'Ornitologia, Museu de Ciències Naturals, Zoologia, Passeig Picasso s/n, 08003 Barcelona, Spain

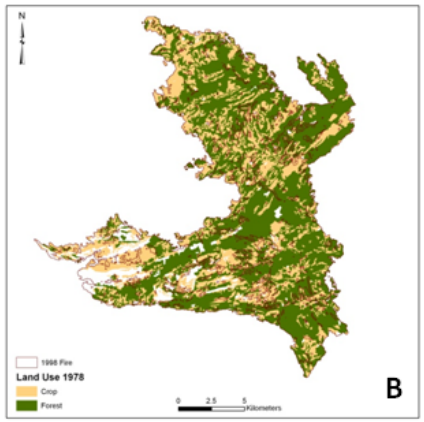
Understanding how historical processes have affected forest ecosystems and shape their current state (3/3)

Land-use and post-fire dynamics

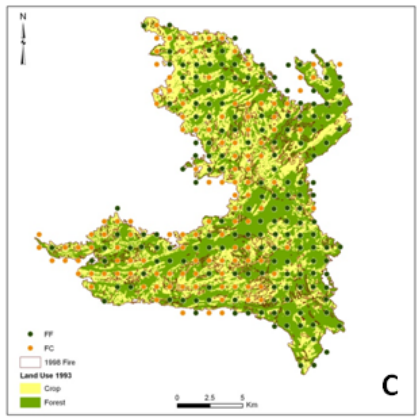
Land-use 56

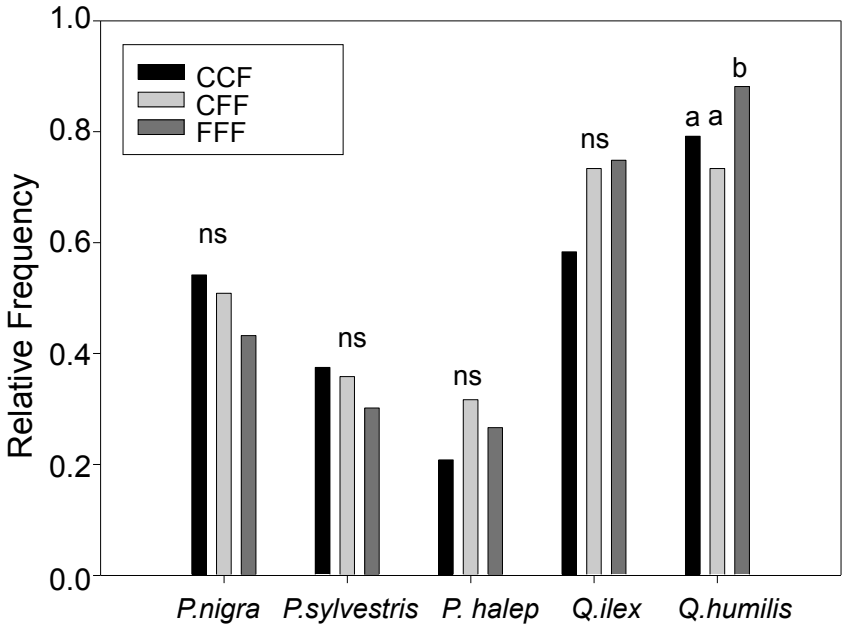


Land-use 78



Land-use 93





CCF : Crop (56) – Crop (78) – Forest (93)
CFF : Crop (56) – Forest (78) – Forest (93)
FFF : Forest (56) – Forest (78) – Forest (93)

Forest Ecology and Management 279 (2012) 121–127

Contents lists available at SciVerse ScienceDirect

Forest Ecology and Management

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

History matters: Previous land use changes determine post-fire vegetation recovery in forested Mediterranean landscapes

Carolina Puerta-Piñero [a,*,1], Josep M. Espelta [b], Belén Sánchez-Humanes [b], Anselm Rodrigo [b,c], Lluís Coll [a,b,1], Lluís Brotons [a,b,1]

[a] Forest Science Centre of Catalonia (CTFC), Crta. St. Llorenç de Morunys, km 2, Solsona E-25280, Spain
[b] CREAF, Cerdanyola del Vallès, 08193 Catalonia, Spain
[c] Unitat d'Ecologia. Facultat Biociències, Univ. Autònoma Barcelona, Cerdanyola del Vallès 08193, Spain

Research axes

1. Understanding how historical processes have affected forest ecosystems and shape their current state (past)

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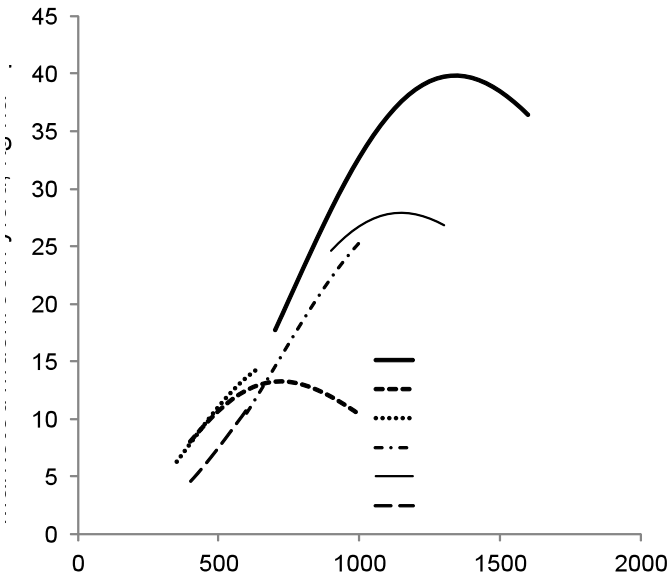
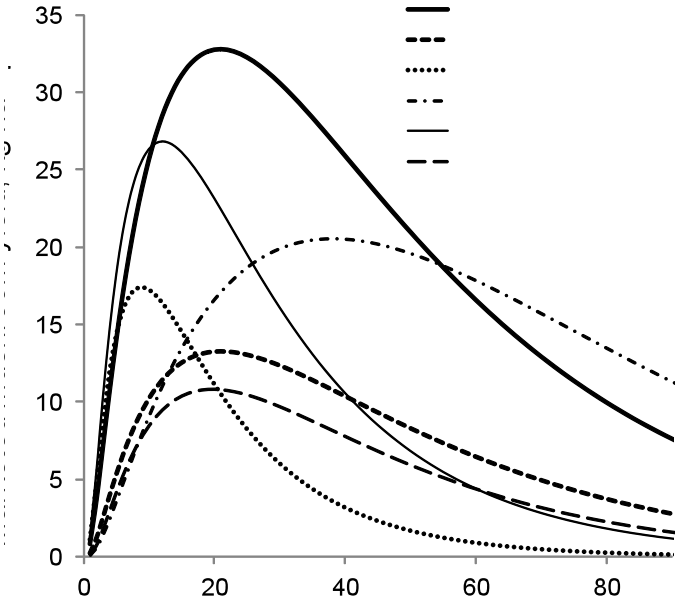
Assessing the response of current forest ecosystem to the different management and drivers of change (1/5)

Mushroom production with management and climate





Ann. For. Sci. 65 (2008) 206
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DOI: 10.1051/forest:2007089

Available online at:
www.afs-journal.org

Original article

Empirical models for predicting the production of wild mushrooms in Scots pine (*Pinus sylvestris* L.) forests in the Central Pyrenees

José Antonio BONET[1]*, Timo PUKKALA[2], Christine R. FISCHER[1], Marc PALAHÍ[3], Juan Martínez de ARAGÓN[1], Carlos COLINAS[1]

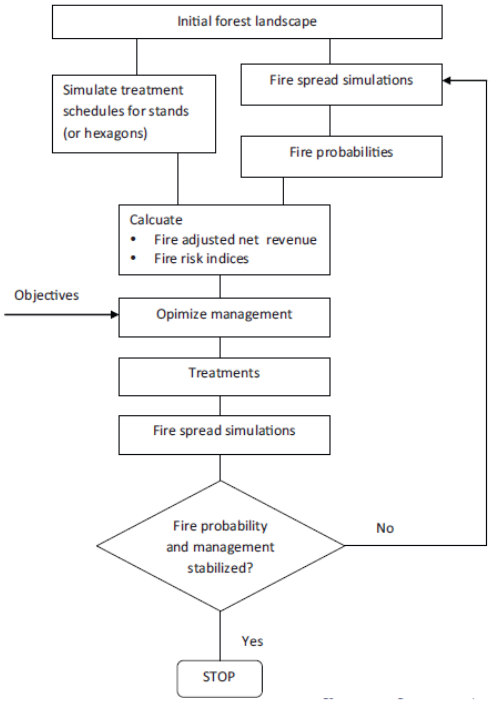
[1] Centre Tecnologic Forestal de Catalunya, Pujada del seminari s/n, Solsona, Spain
[2] University of Joensuu, Faculty of Forestry, PO Box 111, 80101 Joensuu, Finland
[3] European Forest Institute, Mediterranean Regional Office, Passeig Lluis Companys, 23, 08010 Barcelona, Spain

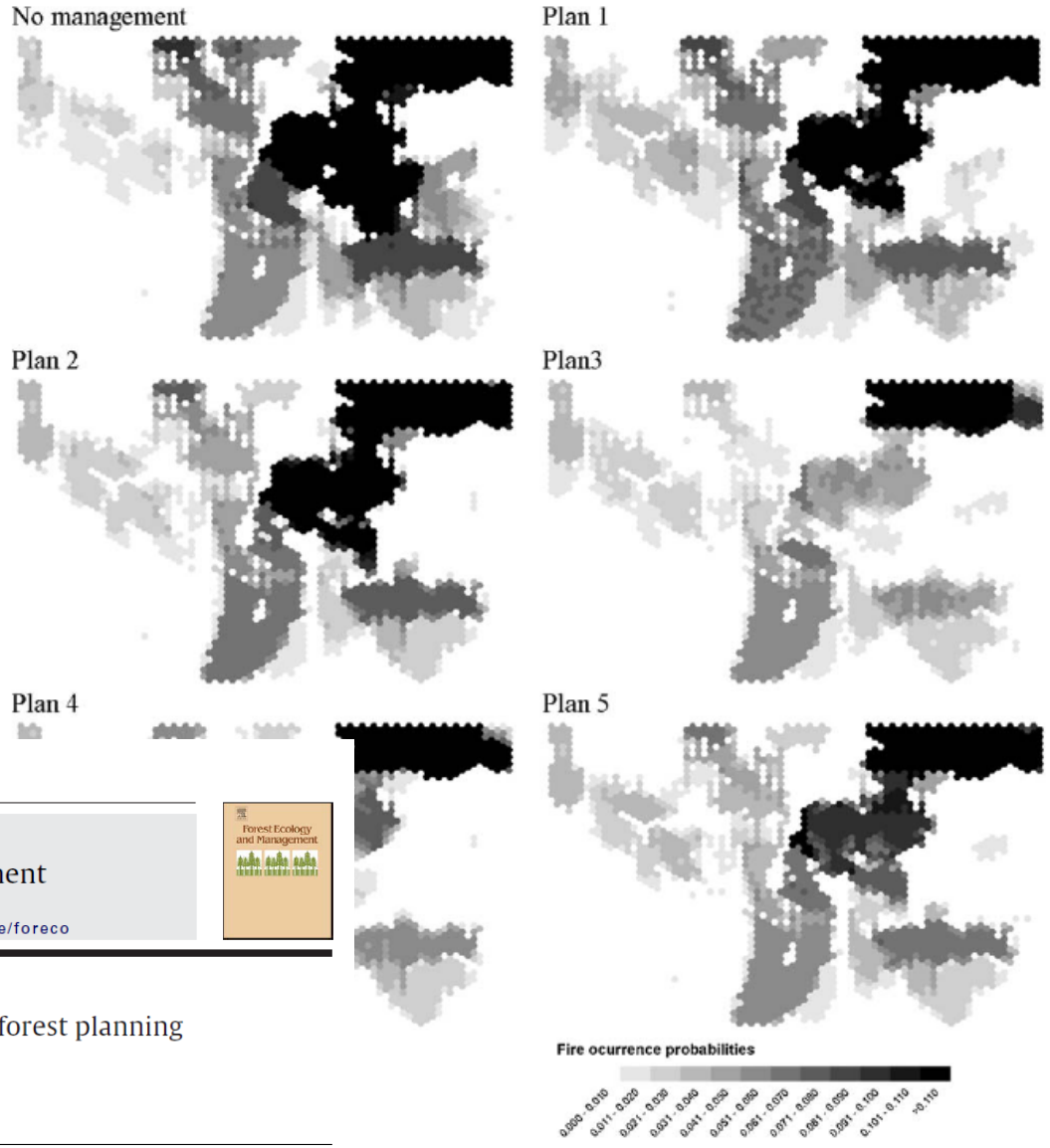
(Received 5 February 2007; accepted 22 August 2007)

De Miguel, Bonet, Pukkala, Martínez de Aragón. In prep

Assessing the response of current forest ecosystem to the different management and drivers of change (2/5)

Fire risk





Contents lists available at ScienceDirect

Forest Ecology and Management

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

Integrating fire risk considerations in landscape-level forest planning

José-Ramón González-Olabarria [a,*], Timo Pukkala [b]

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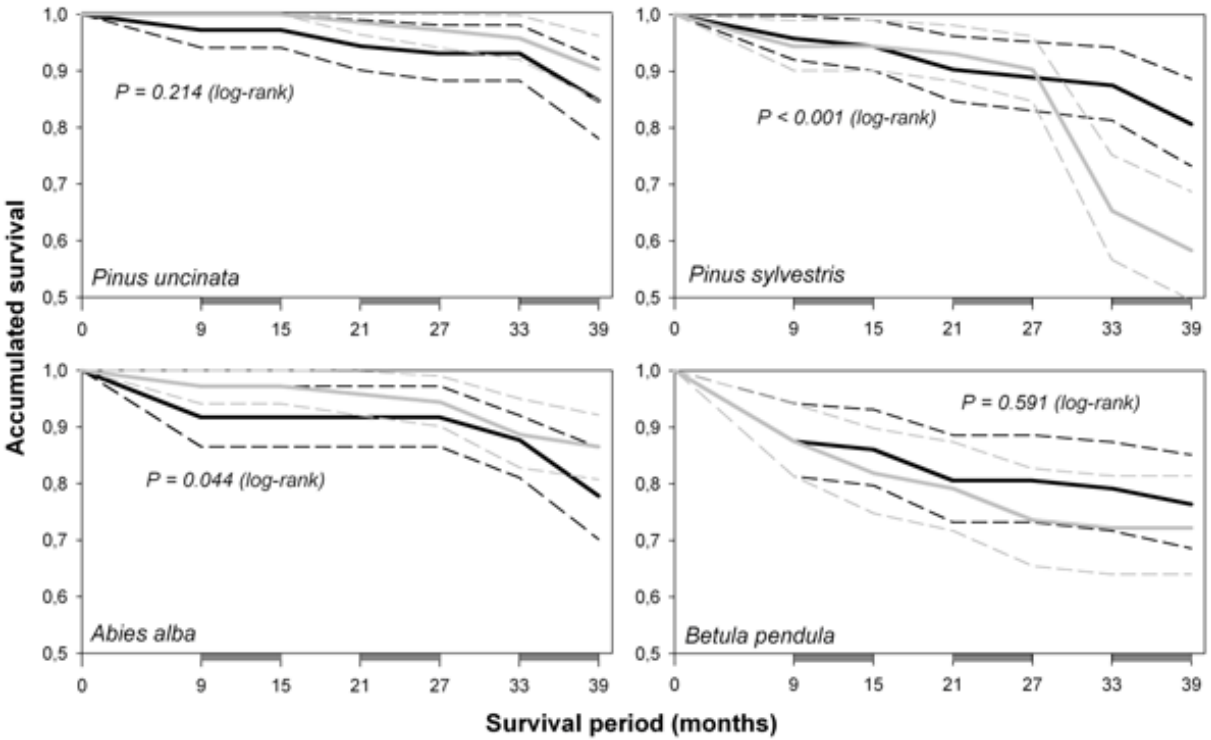
[b] University of Eastern Finland, P.O. Box 111, 80101 Joensuu, Finland

Assessing the response of current forest ecosystem to the different management and drivers of change (3/5)

Regeneration dynamics in climatic gradients



Forest Ecology and Management 303 (2013) 25–34

Contents lists available at SciVerse ScienceDirect

Forest Ecology and Management

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

Unraveling the role of light and biotic interactions on seedling performance of four Pyrenean species along environmental gradients

Aitor Ameztegui [a,*], Lluís Coll [a,b]

[a] Forest Sciences Center of Catalonia (CTFC), Ctra. Sant Llorenç de Morunys km.2, E-25280 Solsona, Spain
[b] CREAF, Centre for Ecological Research and Forestry Applications, Autonomous University of Barcelona, Bellaterra E-08193, Catalonia, Spain

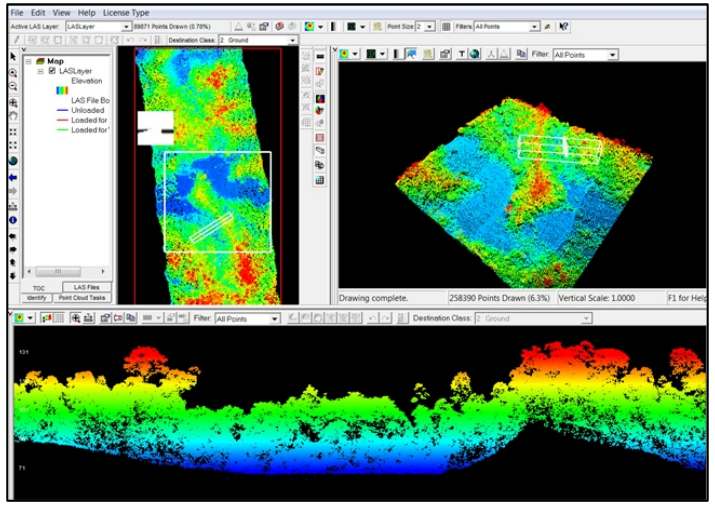
Enrichment plantations (assisted migration)

Martín Alcón, Coll. 2013. Spanish Forest Congress.

Assessing the response of current forest ecosystem to the different management and drivers of change (4/5)

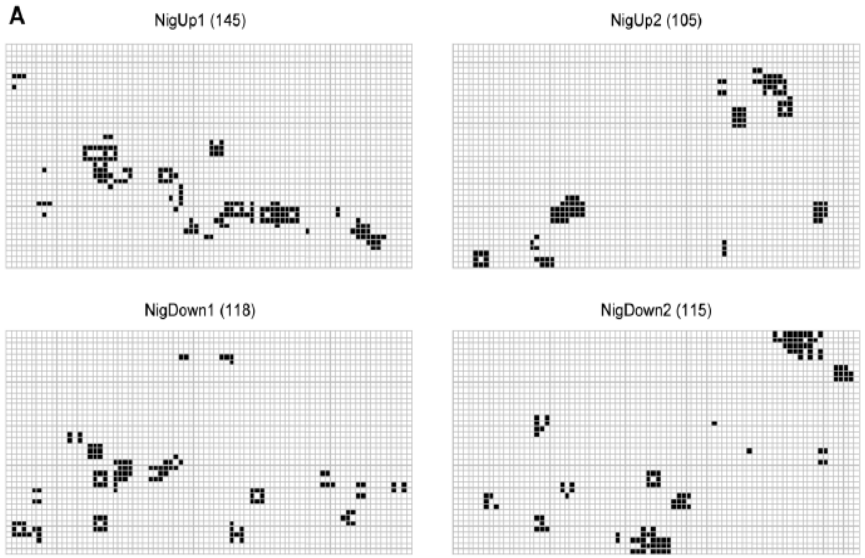
Post-disturbance dynamics (PhD Santi Martin)

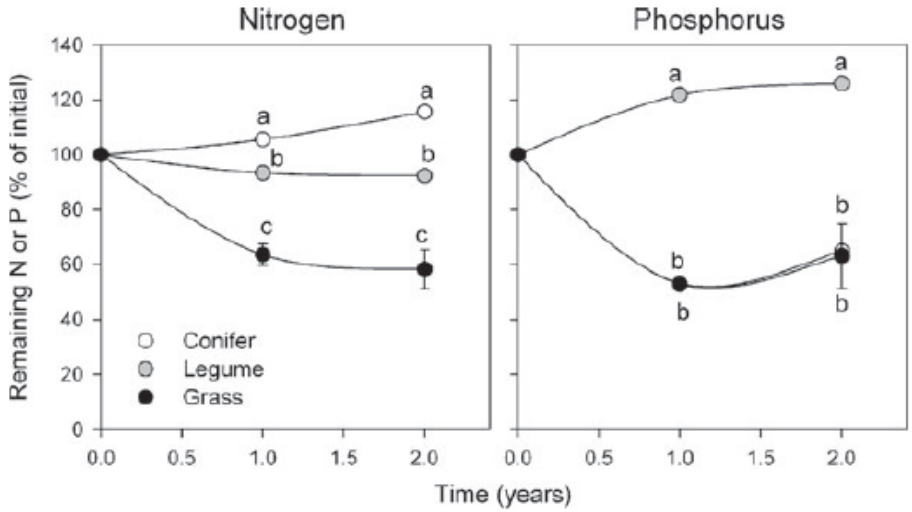
LiDAR



Assessing the response of current forest ecosystem to the different management and drivers of change (5/5)

Schrub encroachment and effects on soil





OPEN ACCESS Freely available online

PLoS one

How Spatial Heterogeneity of Cover Affects Patterns of Shrub Encroachment into Mesic Grasslands

Francesc Montané[1]*¤, Pere Casals[1], Mark R. T. Dale[2]

1 Forest Sciences Center of Catalonia (CTFC), Sant Llorenç de Morunys, Solsona, Spain, 2 University of Northern British Columbia, Prince Ge

Abstract

We used a multi-method approach to analyze the spatial patterns of shrubs and cover types (plant species in grassland-shrubland ecotones. This approach allows us to assess how fine-scale spatial heterogenei affects the patterns of *Cytisus balansæ* shrub encroachment into mesic mountain grasslands (Catalan Spatial patterns and the spatial associations between juvenile shrubs and different cover types were

Plant Soil (2010) 337:151–165
DOI 10.1007/s11104-010-0512-1

REGULAR ARTICLE

Aboveground litter quality changes may drive soil organic carbon increase after shrub encroachment into mountain grasslands

Francesc Montané · Joan Romanyà · Pere Rovira · Pere Casals

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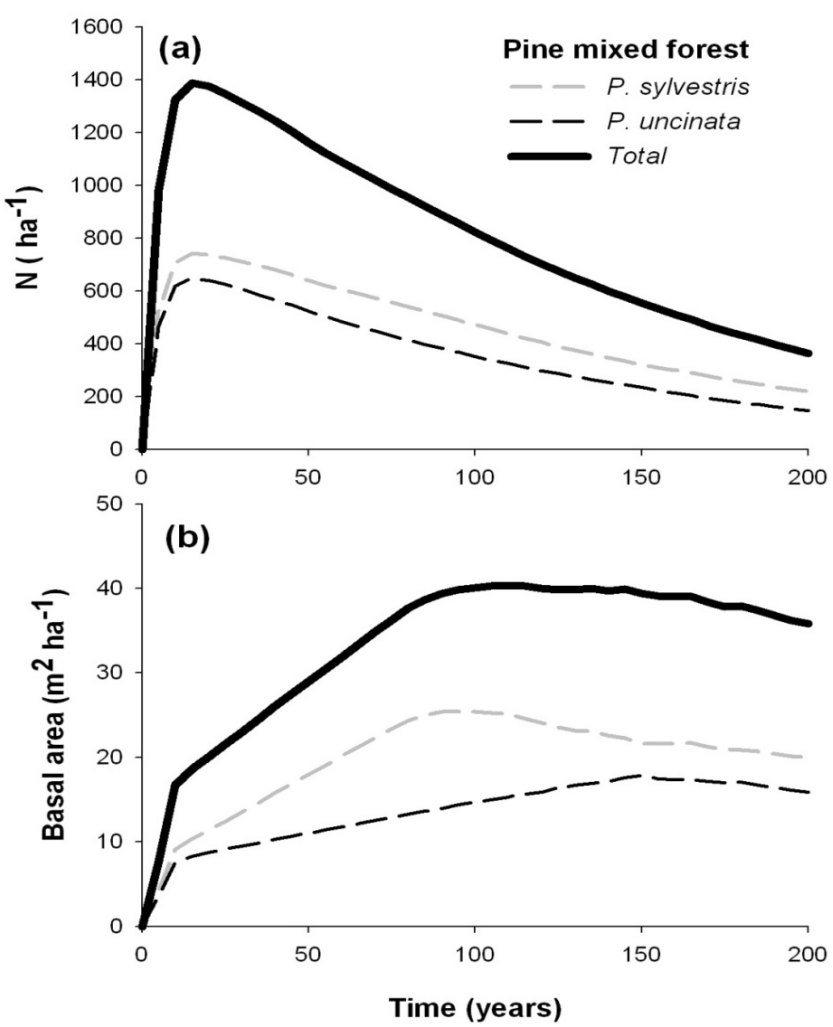
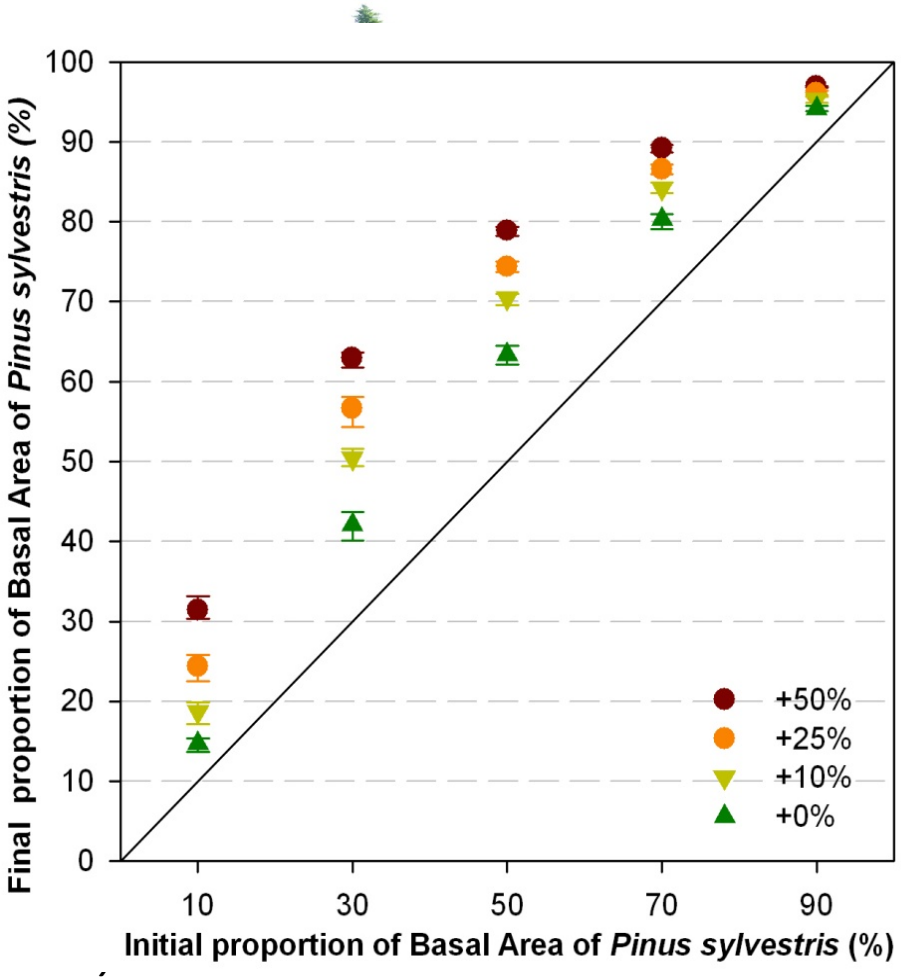
Imagining the future developing integrative forest ecosystem assessments under sound future socioeconomic and environmental scenarios (1/6)

Ecotone dynamics under different CC scenarios (SORTIE-ND)

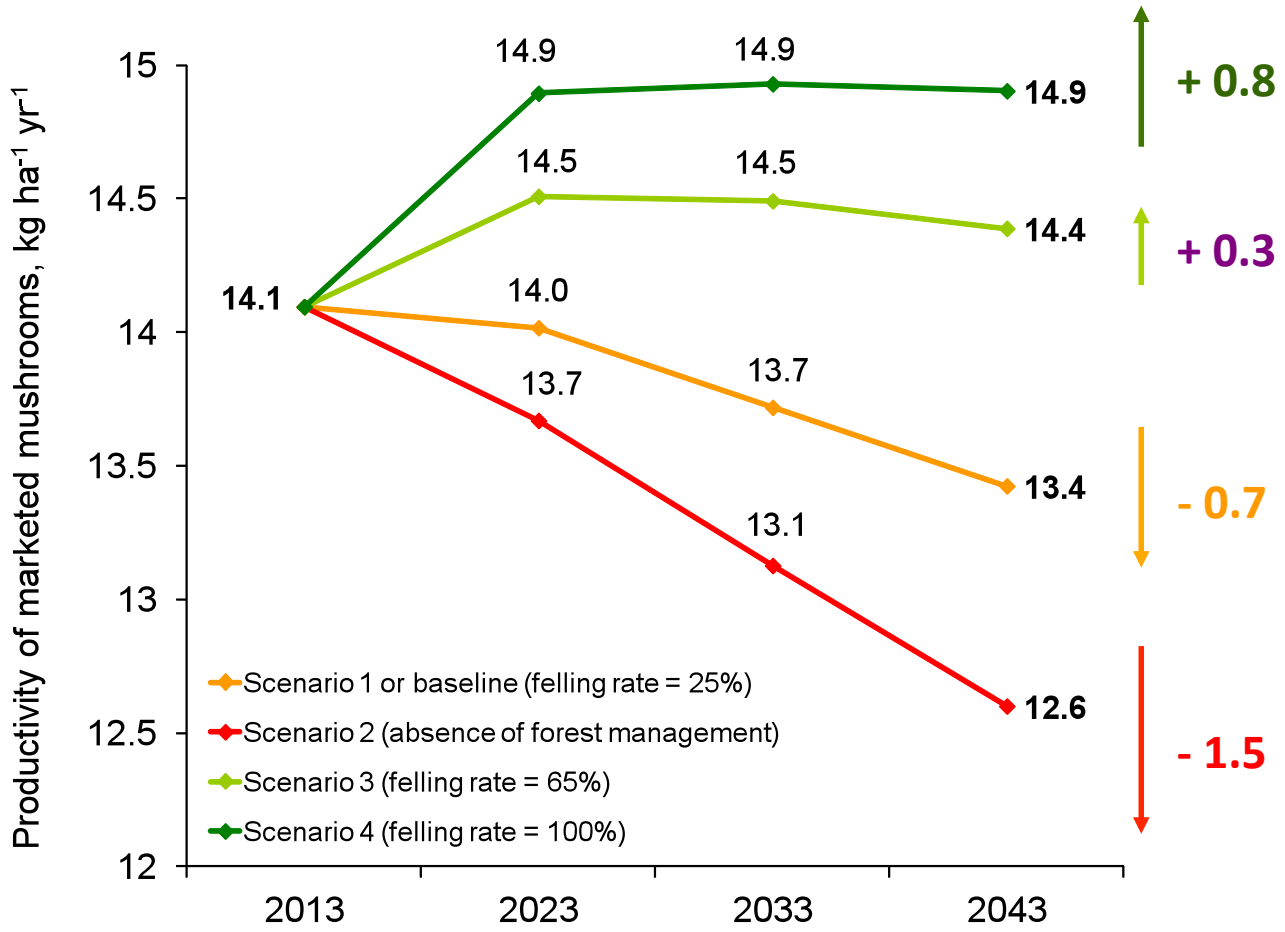




Ameztegui, Coll, Messier. In prep.

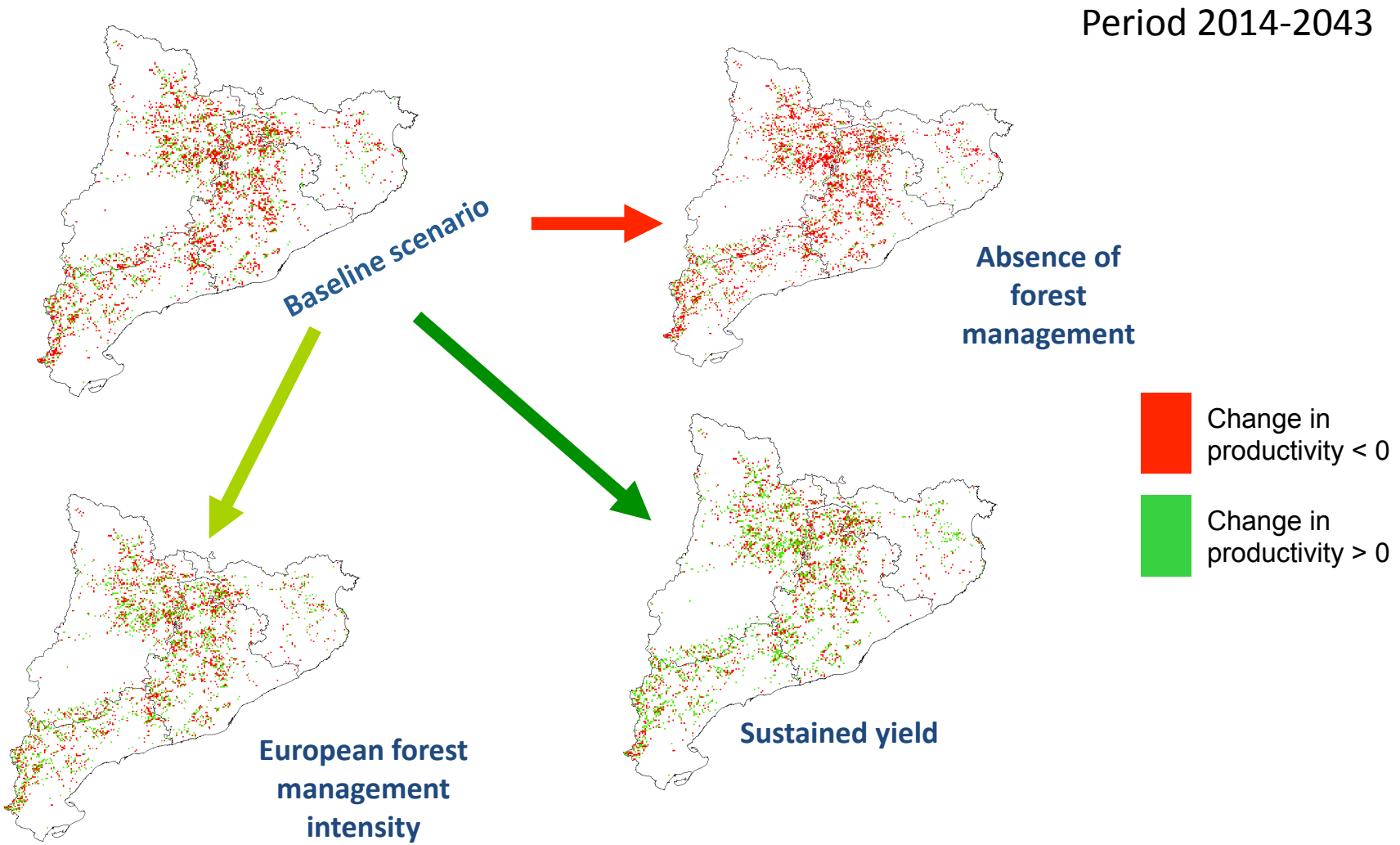
Imagining the future developing integrative forest ecosystem assessments under sound future socioeconomic and environmental scenarios (2/6)

Scenario analysis: impact of forest management intensity on mushroom productivity



De Miguel, Bonet, Pukkala, Martínez de Aragón. In prep

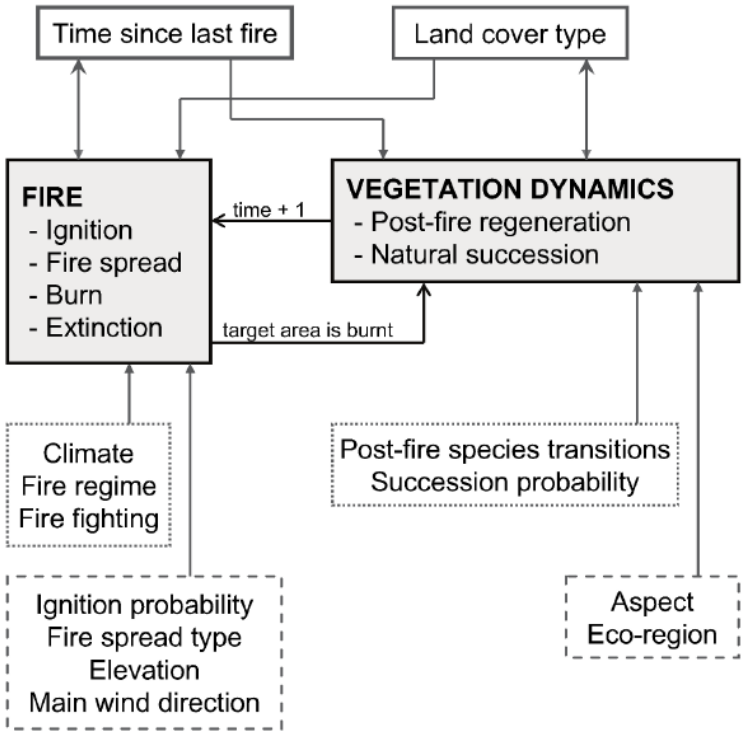
Imagining the future developing integrative forest ecosystem assessments under sound future socioeconomic and environmental scenarios (3/6)

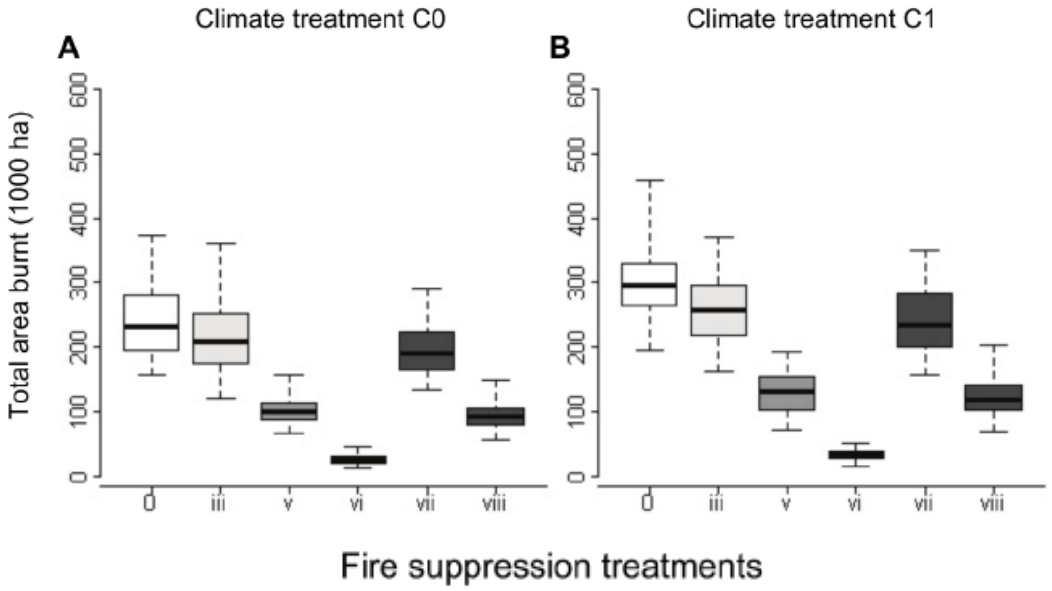


De Miguel, Bonet, Pukkala, Martínez de Aragón. In prep

Imagining the future developing integrative forest ecosystem assessments under sound future socioeconomic and environmental scenarios (4/6)

Landscape dynamics model and fire (MEDFIRE)





OPEN ACCESS Freely available online

PLOS ONE

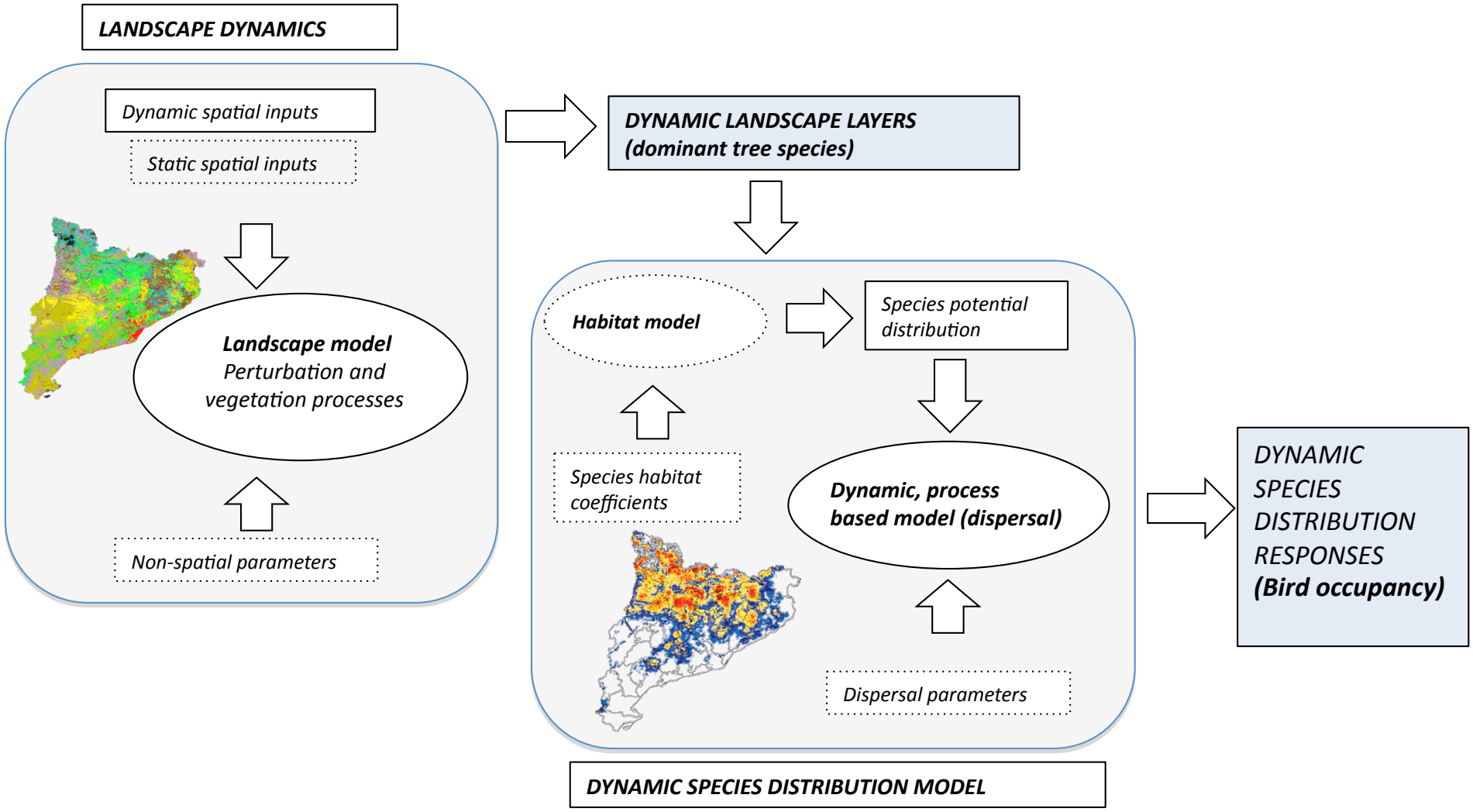
How Fire History, Fire Suppression Practices and Climate Change Affect Wildfire Regimes in Mediterranean Landscapes

Lluís Brotons[1,2]*, Núria Aquilué[1,2], Miquel de Cáceres[1,2], Marie-Josée Fortin[3], Andrew Fall[4]

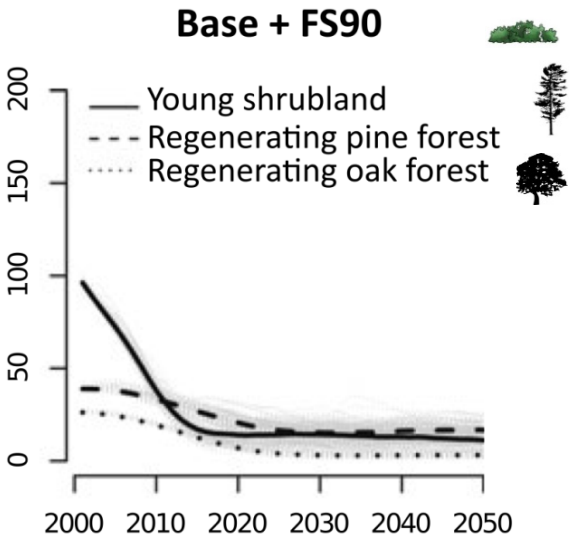
1 Grup d'Ecologia del Paisatge, Àrea de Biodiversitat, CTFC (Centre Tecnològic Forestal de Catalunya), Solsona, Catalonia, Spain, **2** CREAF (Centre de Recerca Ecològica i Aplicacions Forestals), Bellaterra, Spain, **3** Department of Ecology & Evolutionary Biology, University of Toronto, Toronto, Ontario, Canada, **4** Resource and Environmental Management, Simon Fraser University and Gowlland Technologies Ltd, Lasqueti, British Columbia, Canada

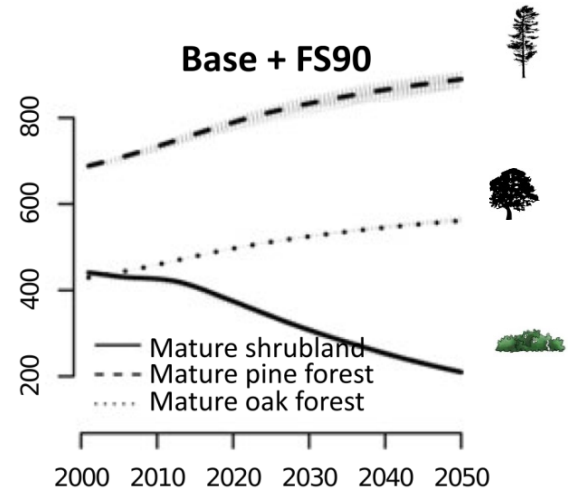
Imagining the future developing integrative forest ecosystem assessments under sound future socioeconomic and environmental scenarios (5/6)

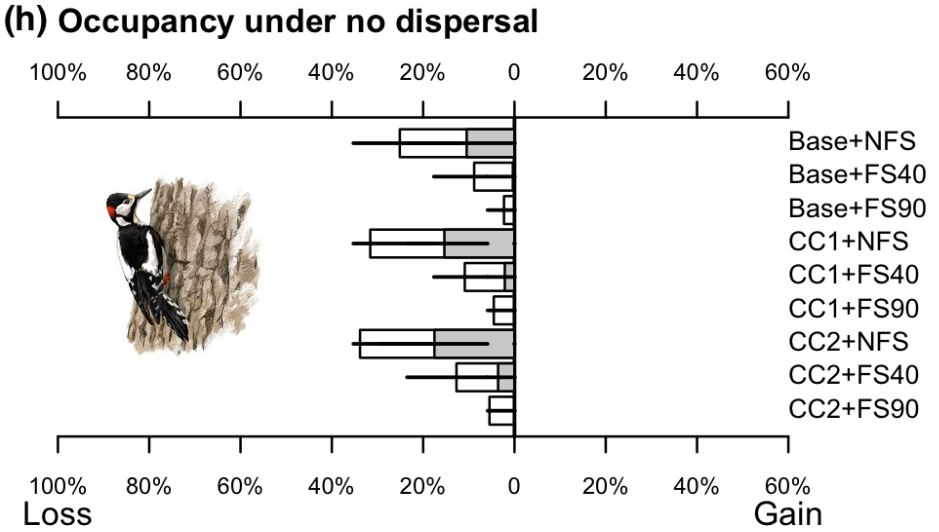
Hybrid metamodelling (landscape dynamics models with SDMs)



Imagining the future developing integrative forest ecosystem assessments under sound future socioeconomic and environmental scenarios (6/6)





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looking forward to establish fruitful collaborations with you!