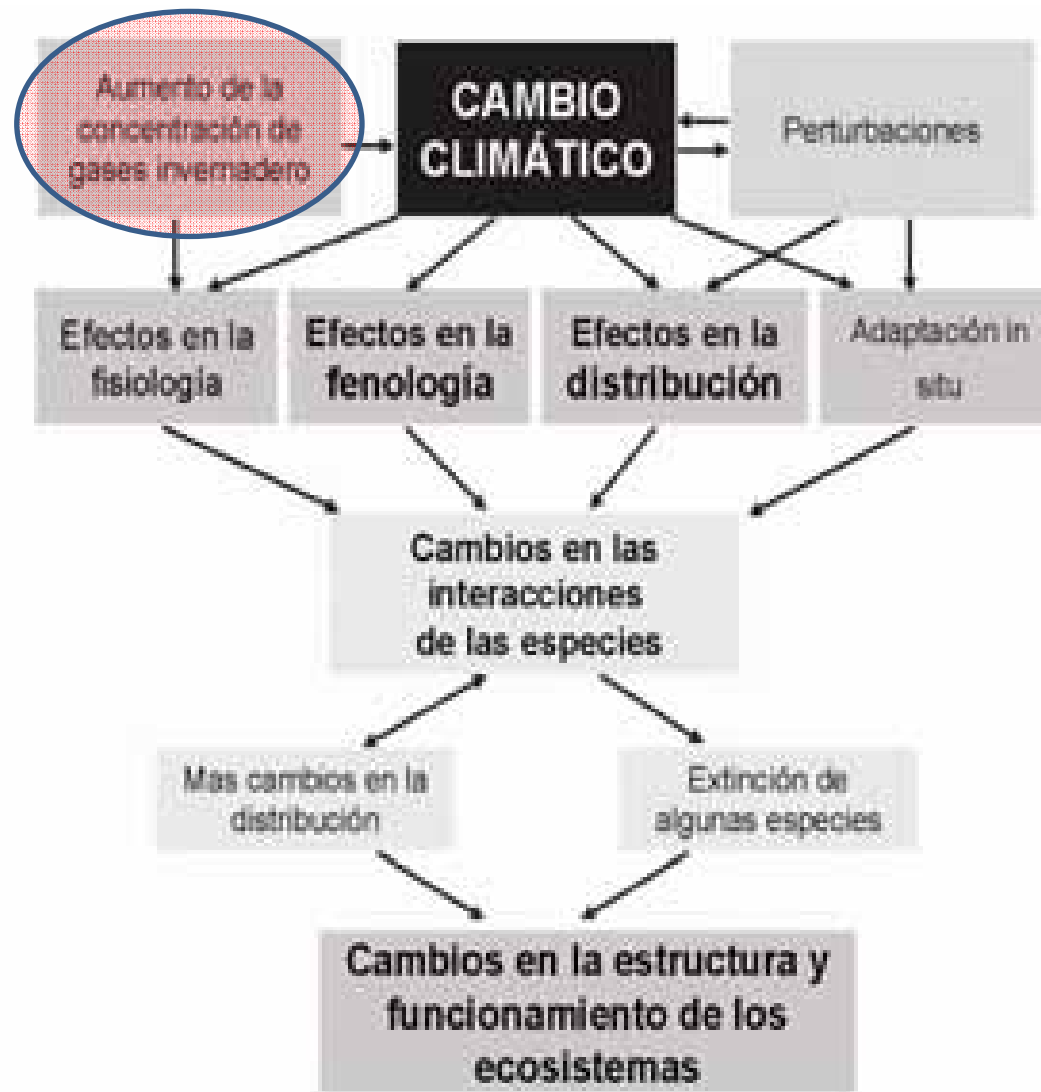


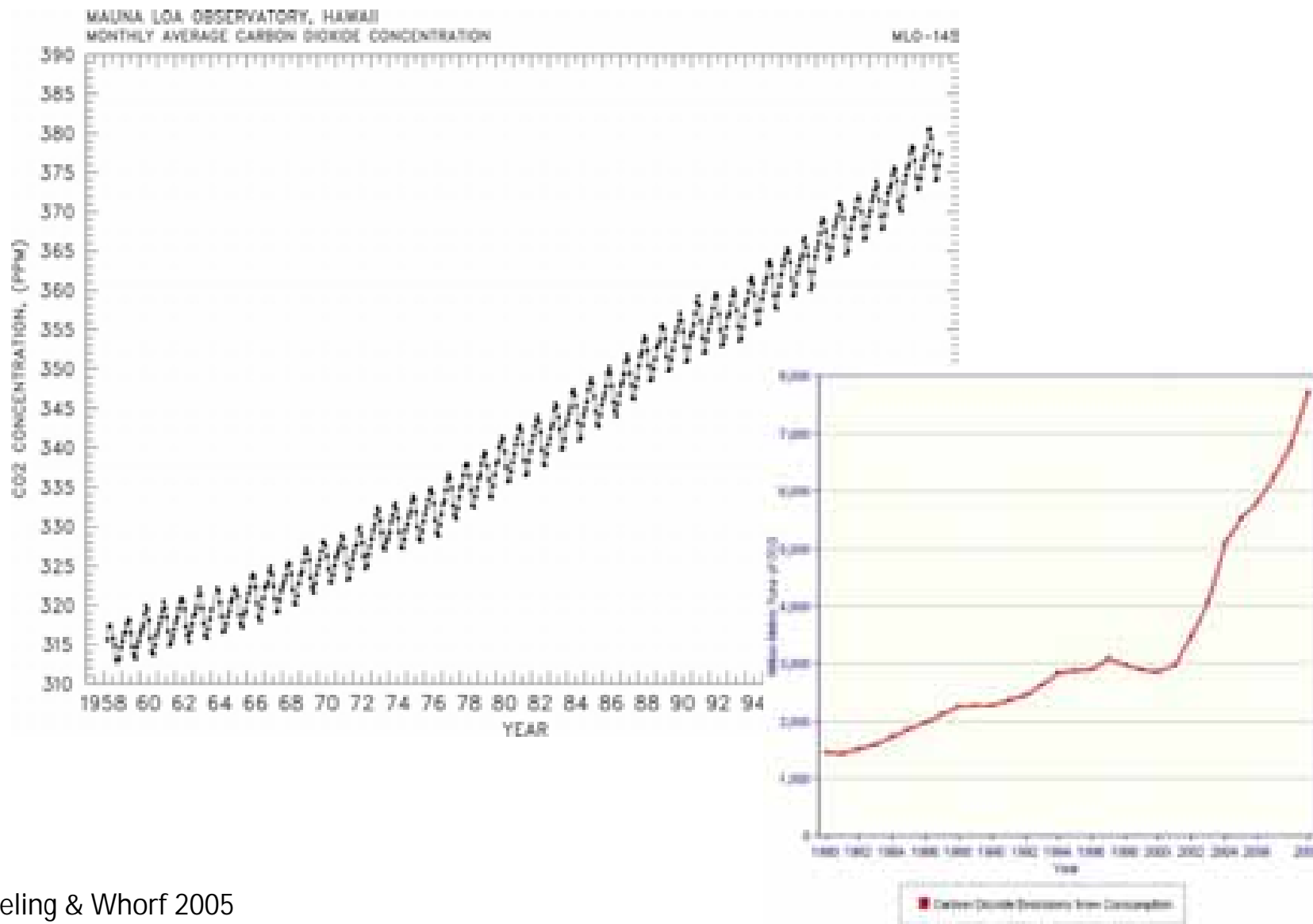
# CLIMATE CHANGE AND CATALONIAN FORESTS

Lluís Coll

Centre Tecnològic Forestal de Catalunya (CTFC)  
Grup de Funcionament i Dinàmica del Bosc  
<http://fidbosc.ctfc.cat>

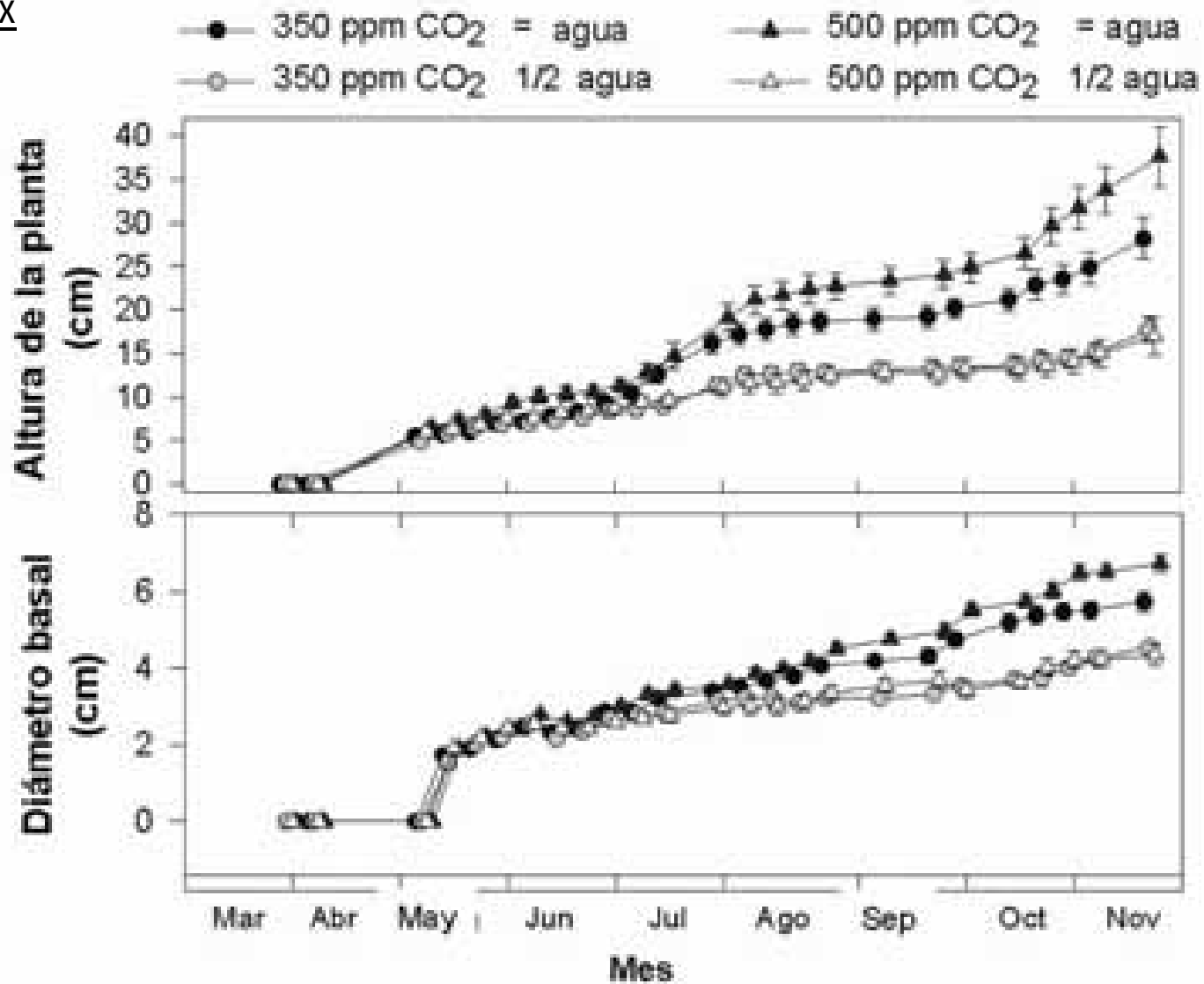


# Greenhouse gases

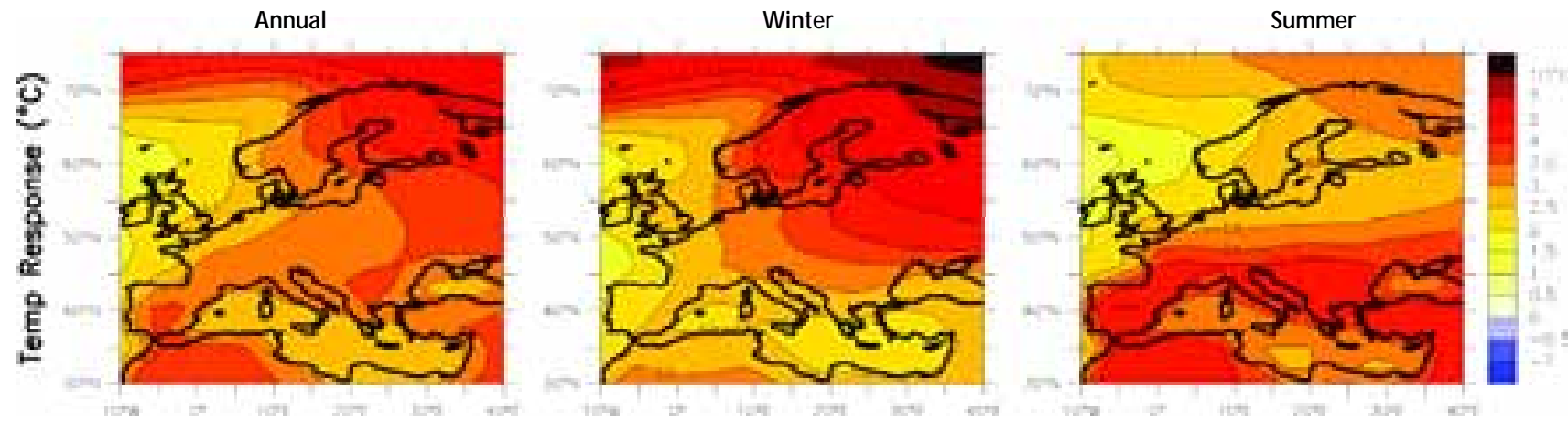


Keeling & Whorf 2005

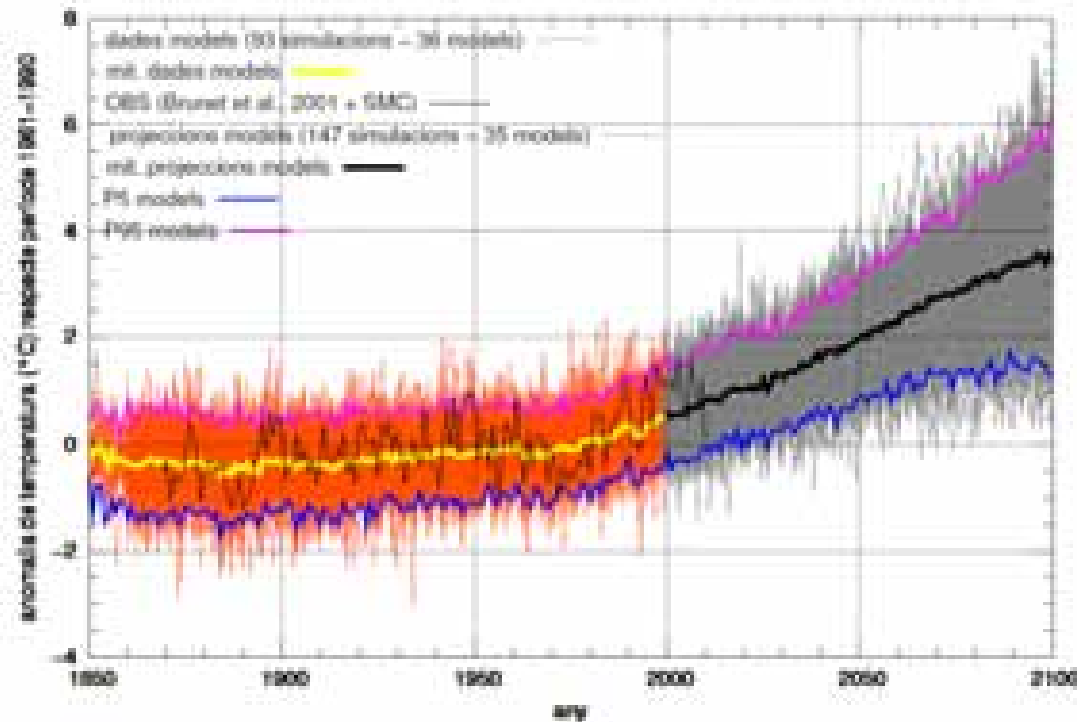
Q. ilex



# Temperature increases

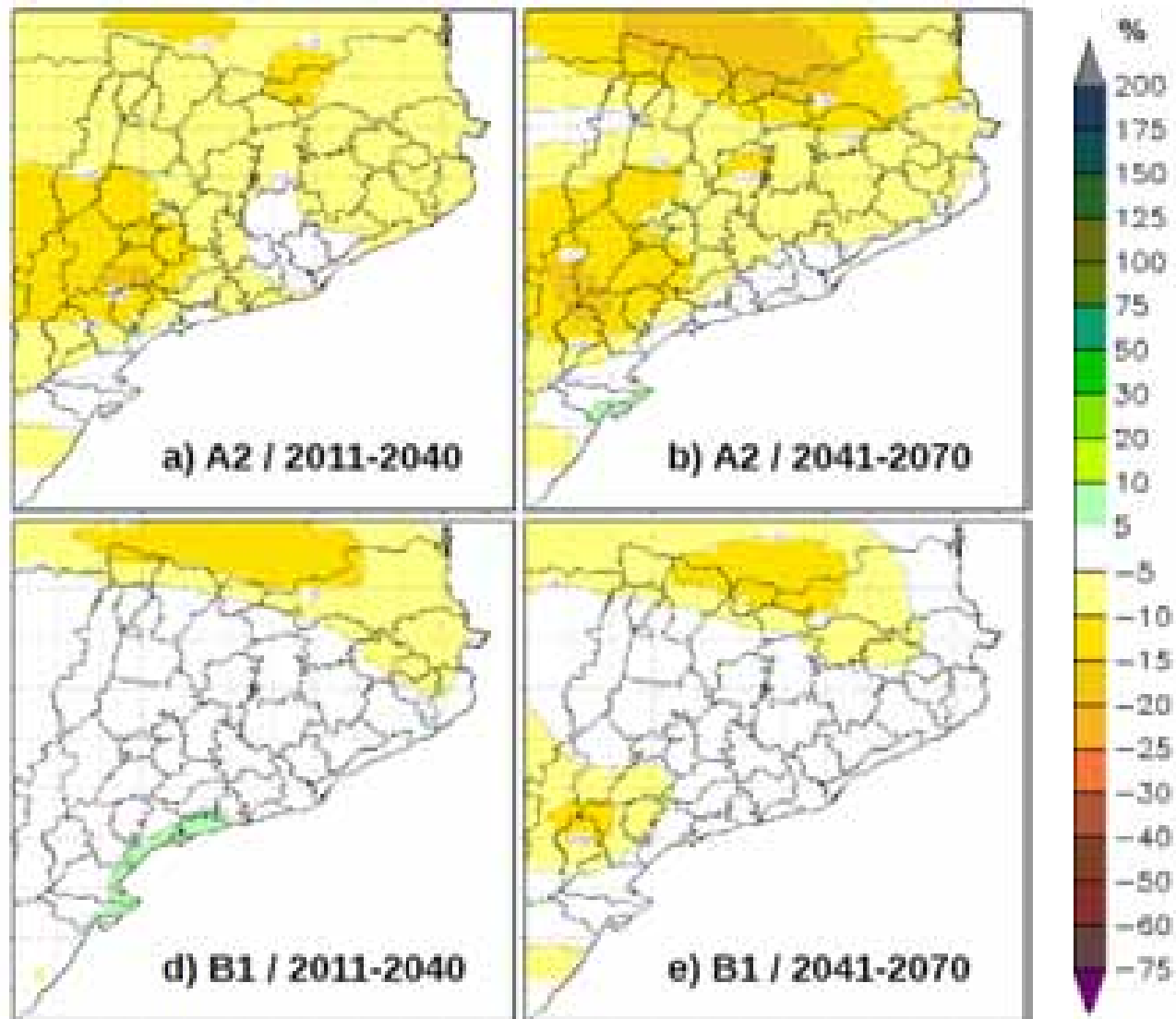


Christensen et al. (2007)

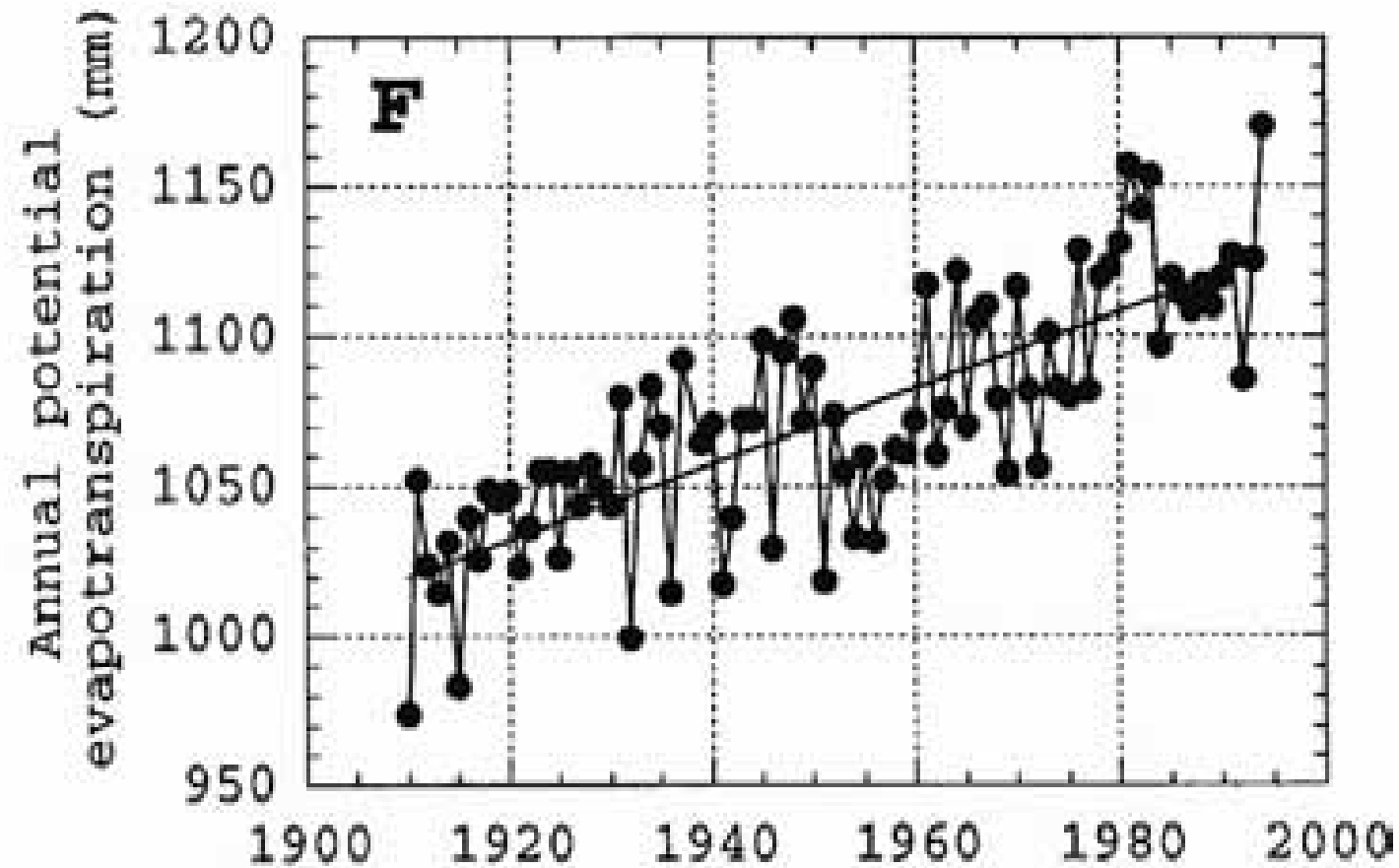


Barrera-Escoda i Cunillera (2011)

# Moderate effect on precipitation



# Increase of annual evapotranspiration





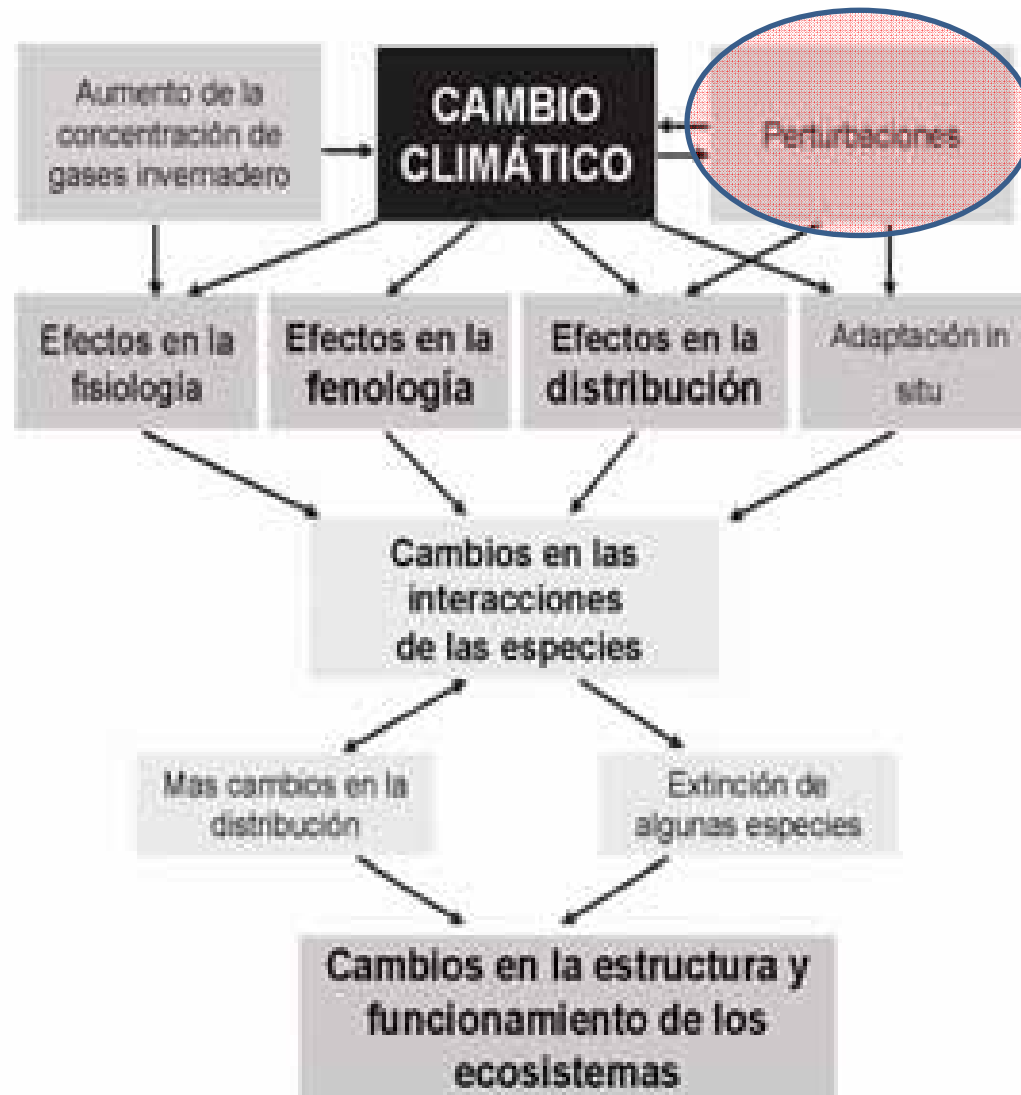
# Extreme drought periods

Foto: Jordi Camprodon

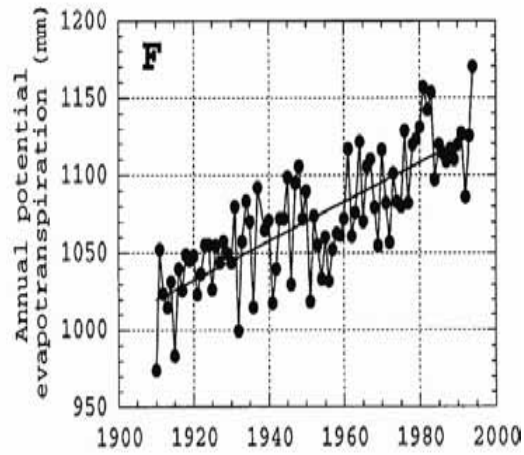
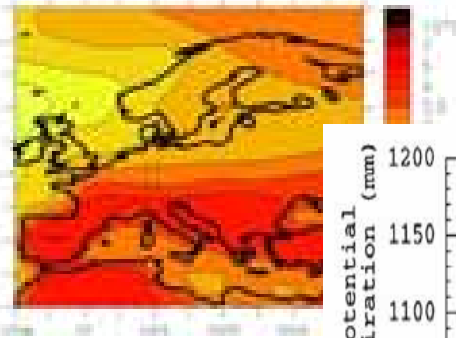






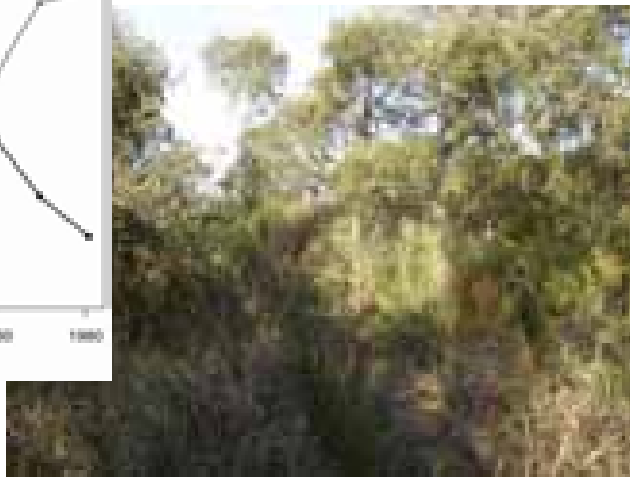
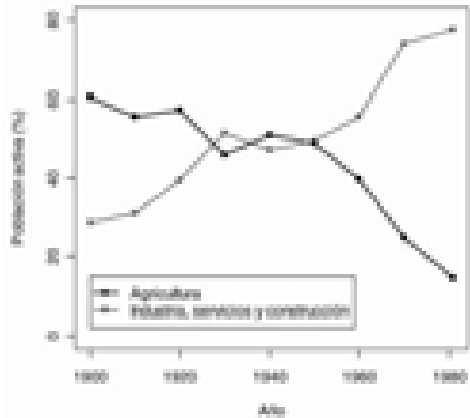


# Increasing fire risk

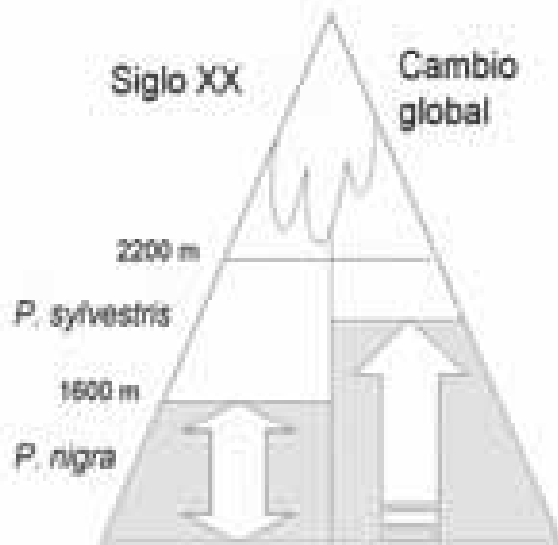


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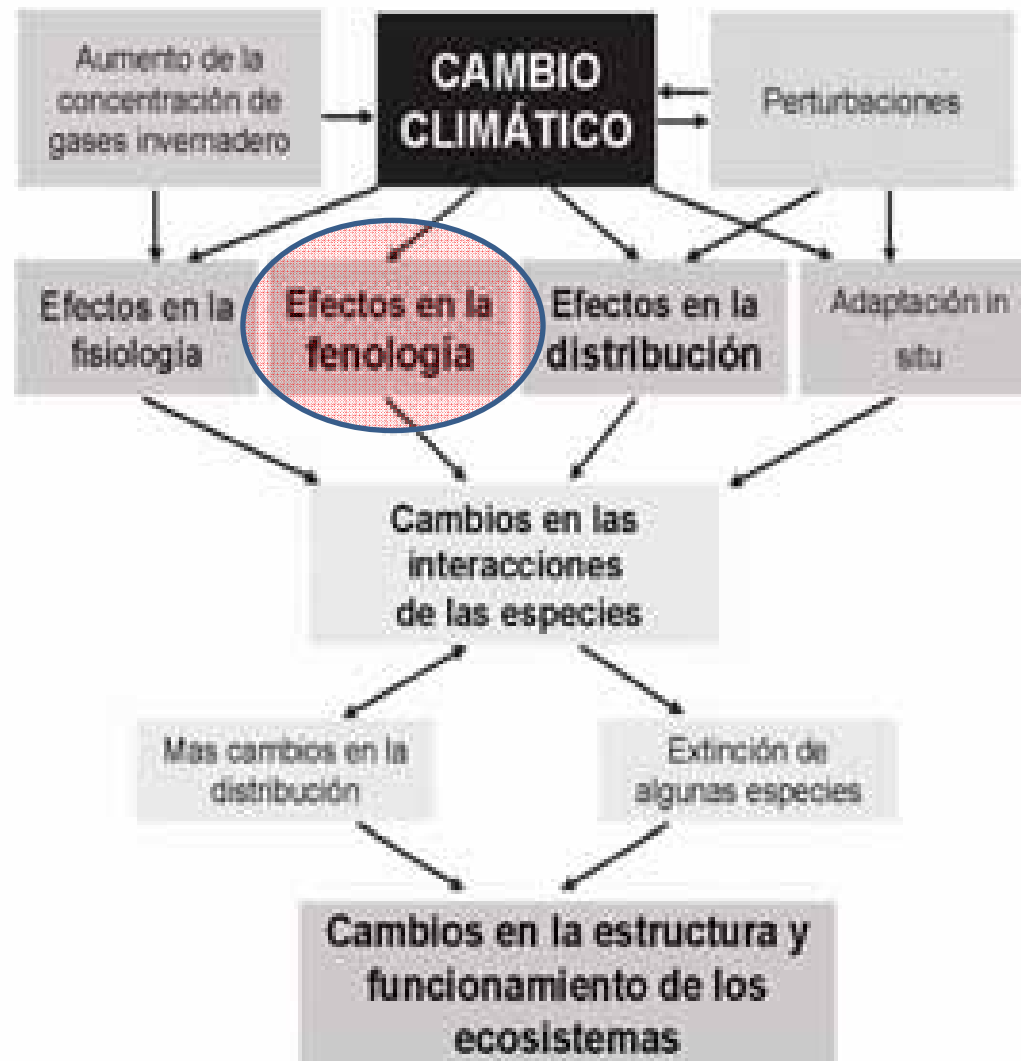
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# Pine Processionary

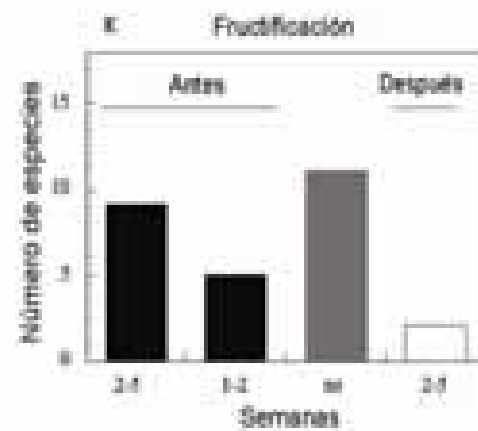
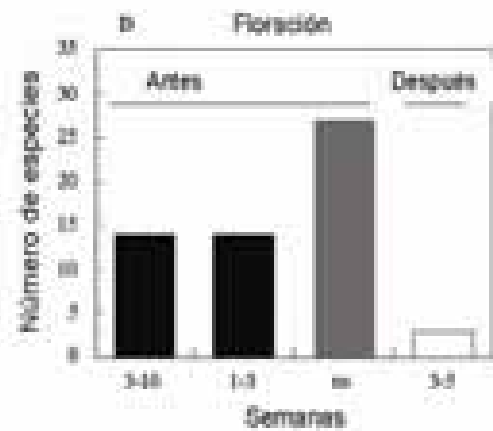
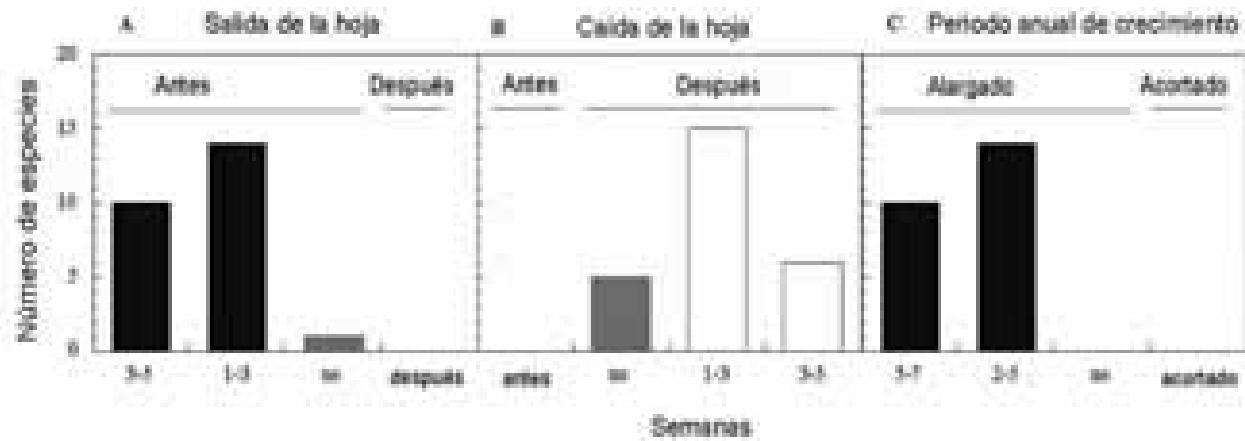


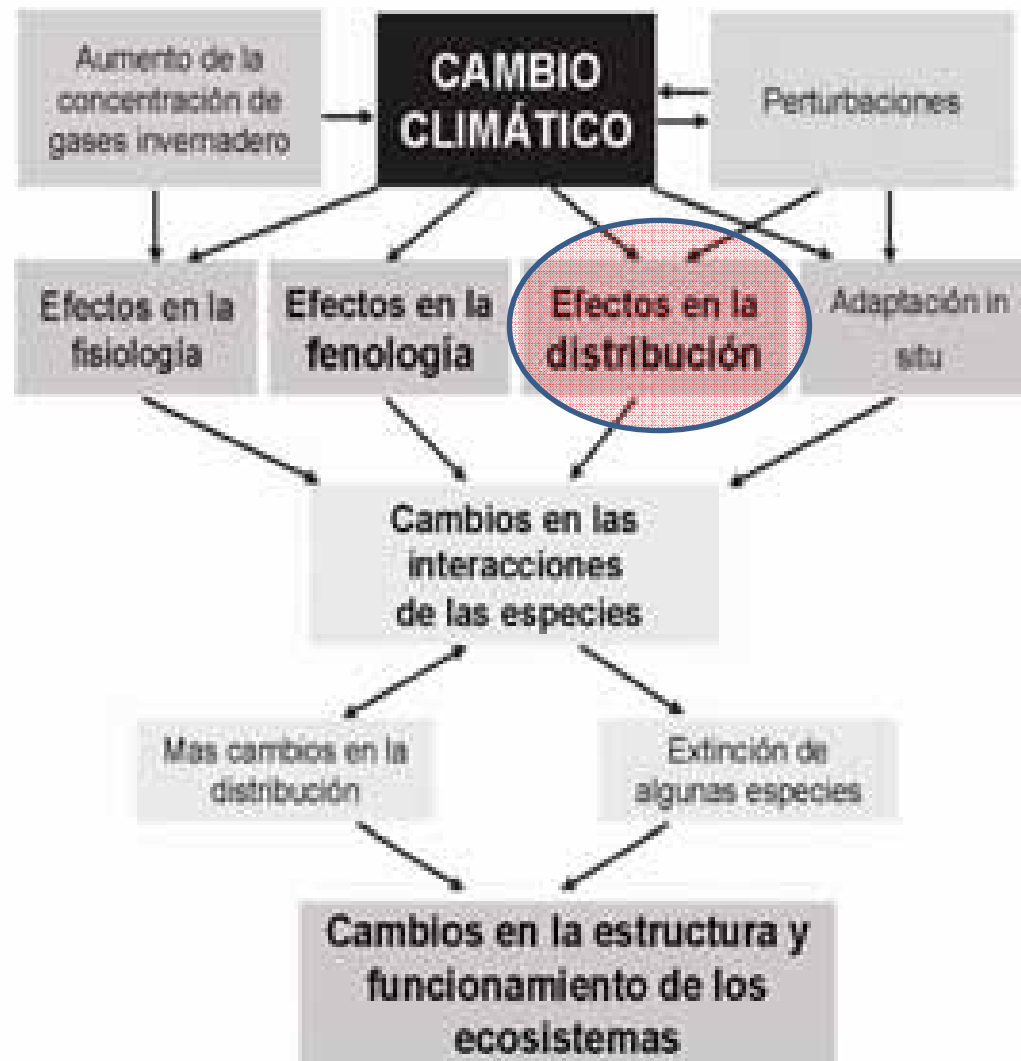
Sierra Nevada



Peñuelas et al. 2004 (adapted from Hughes 2000)

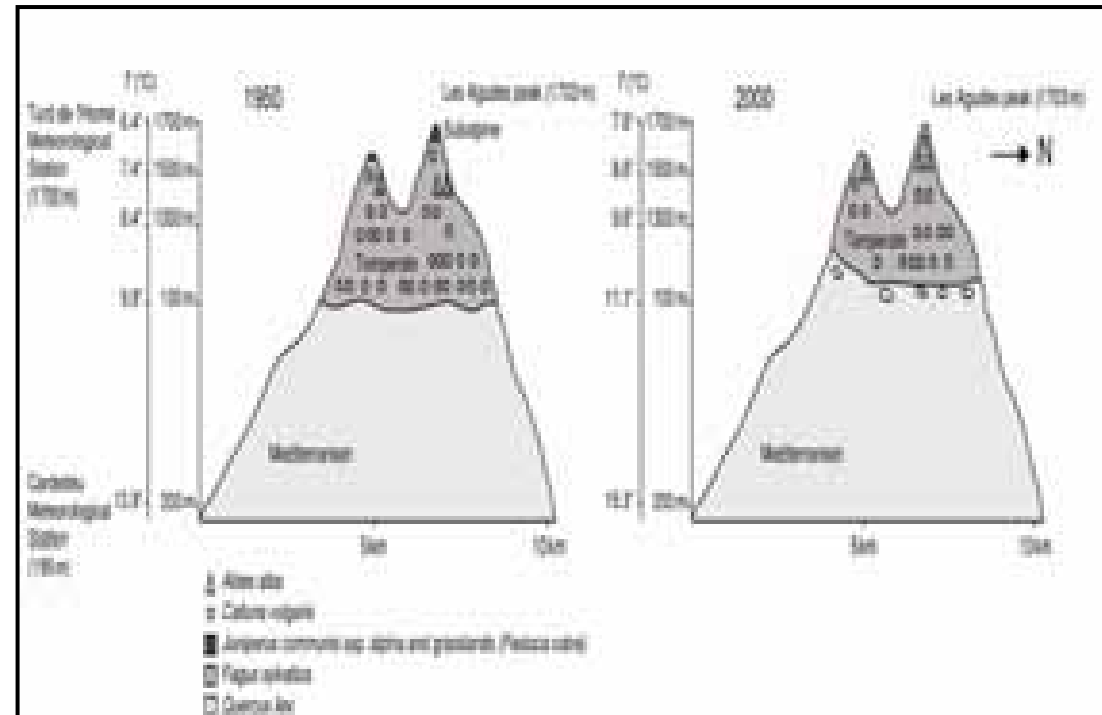
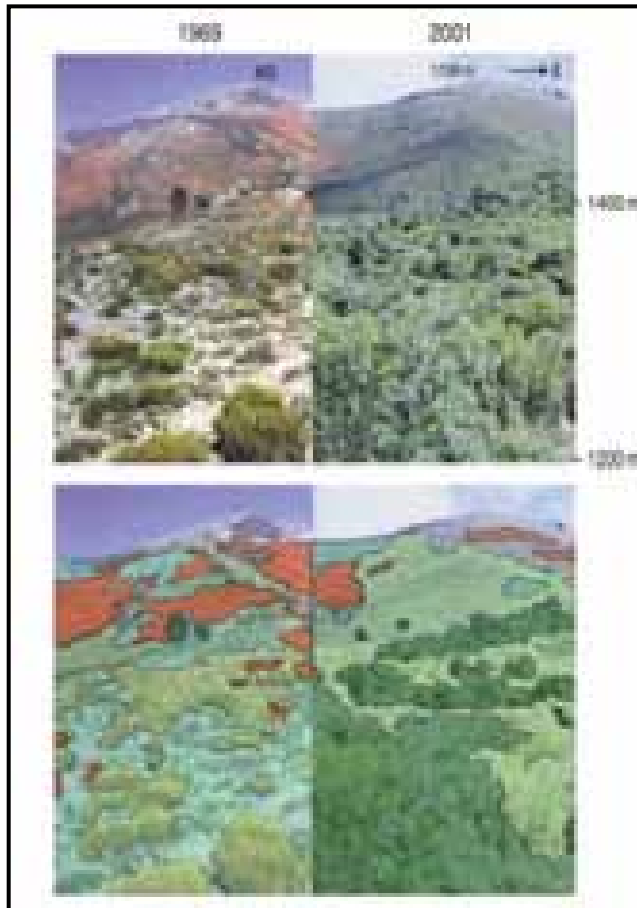
### Cambios en el periodo 1952-2000



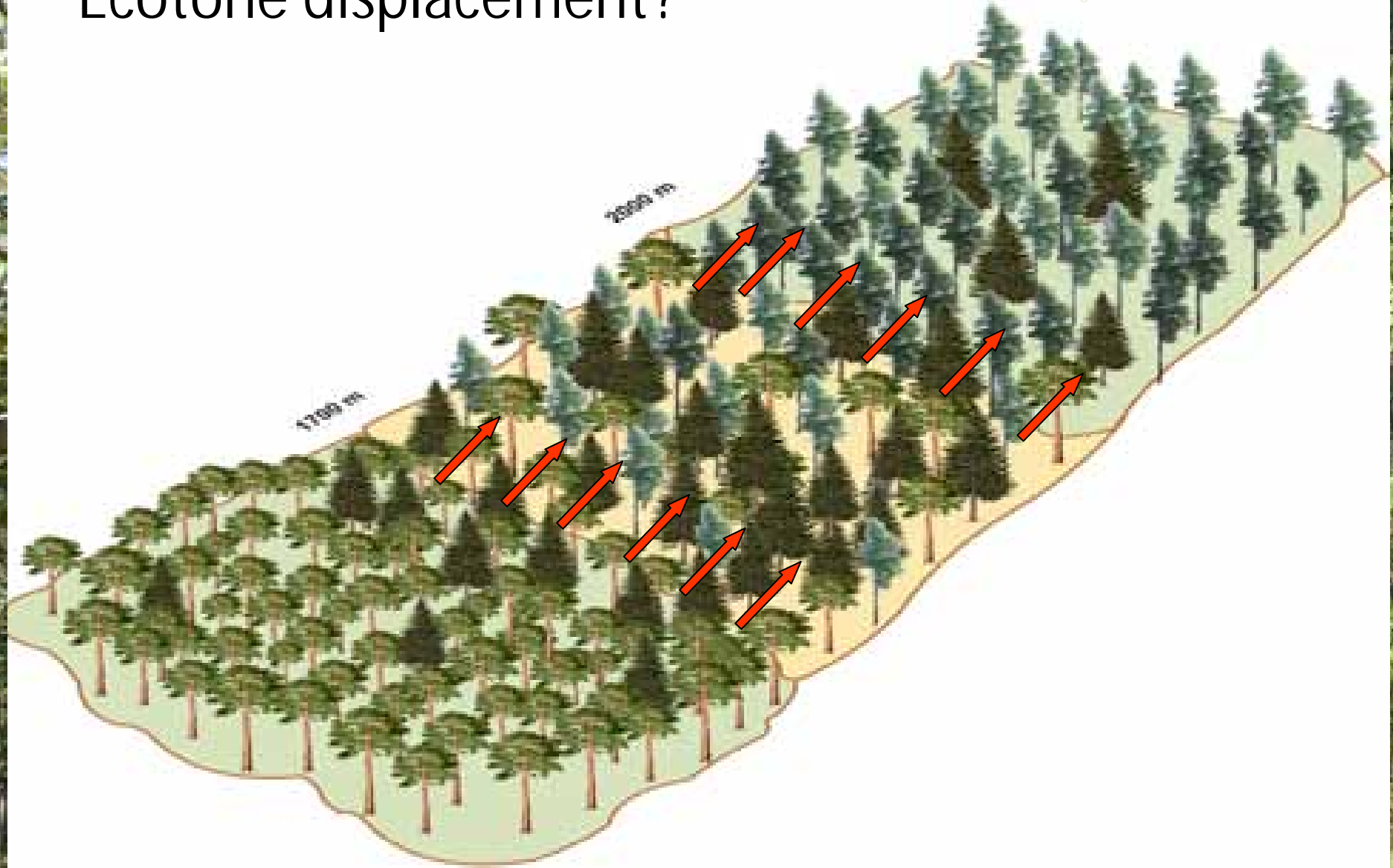


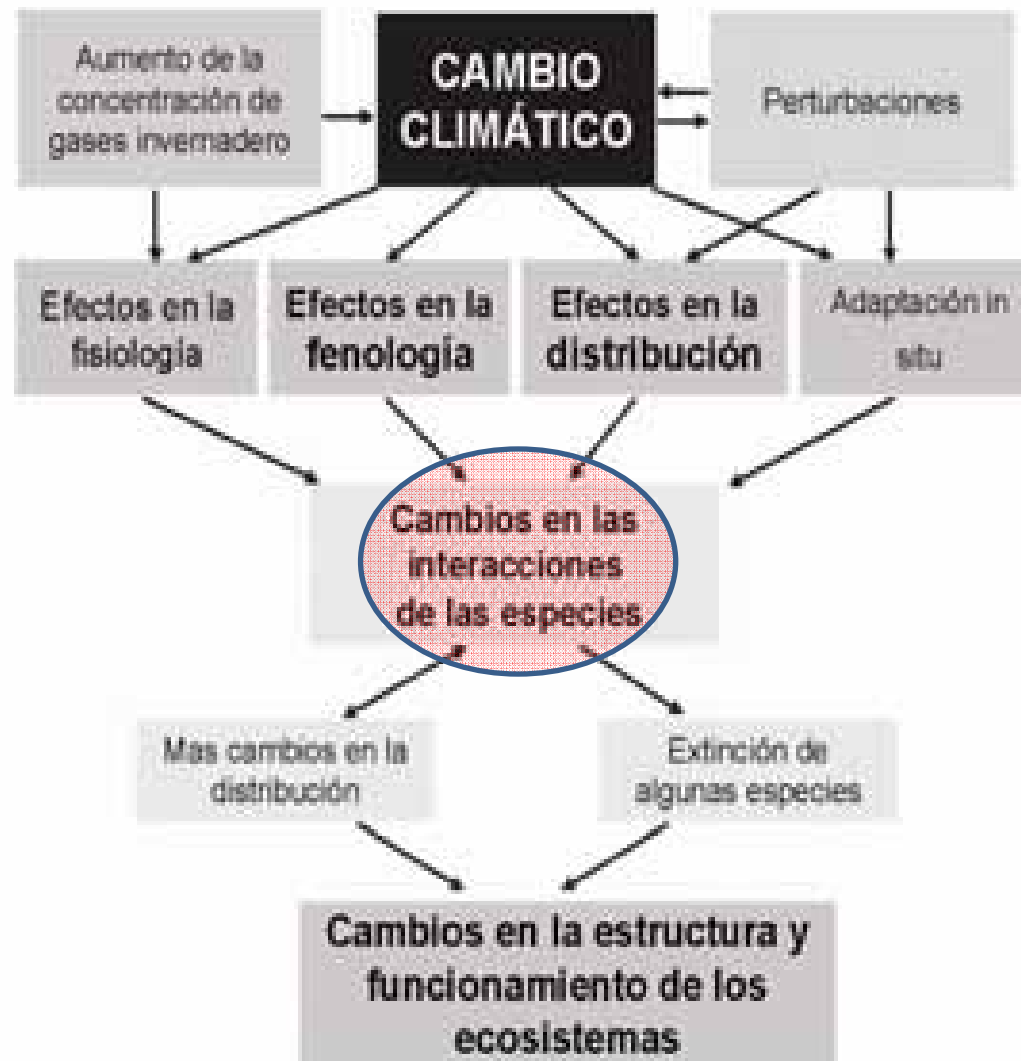


# Turó de l'Home – Les Agudes (Montseny)



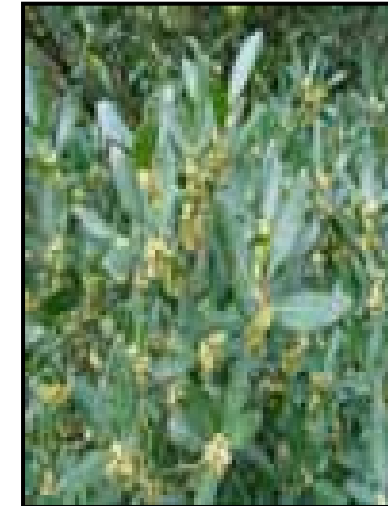
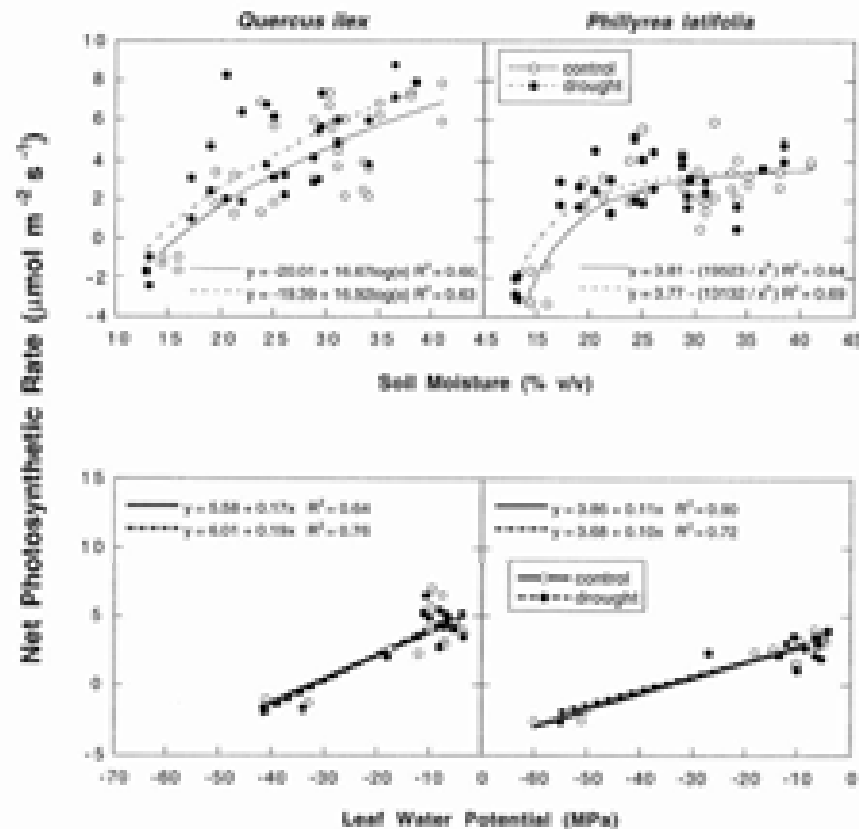
# Ecotone displacement?

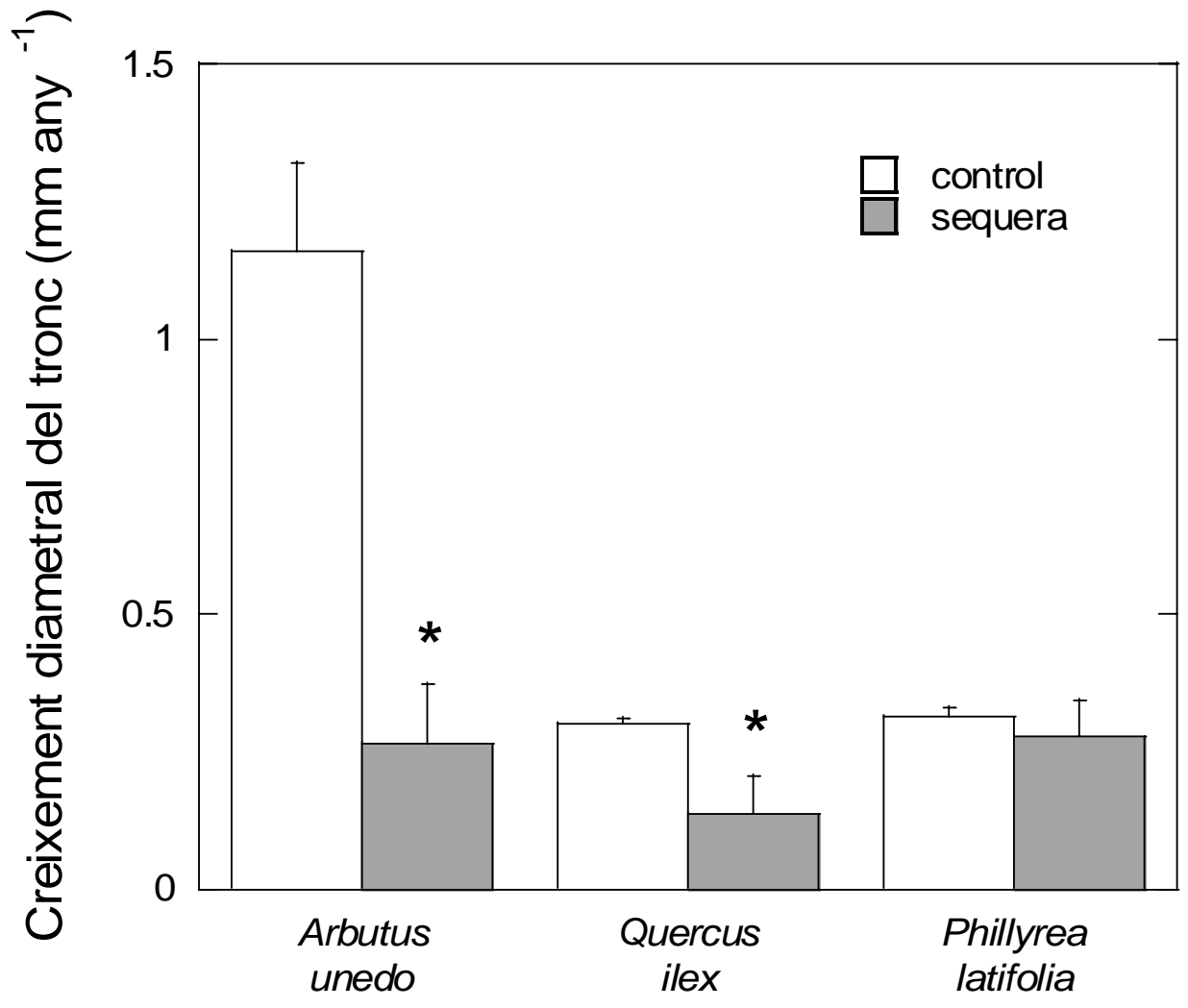


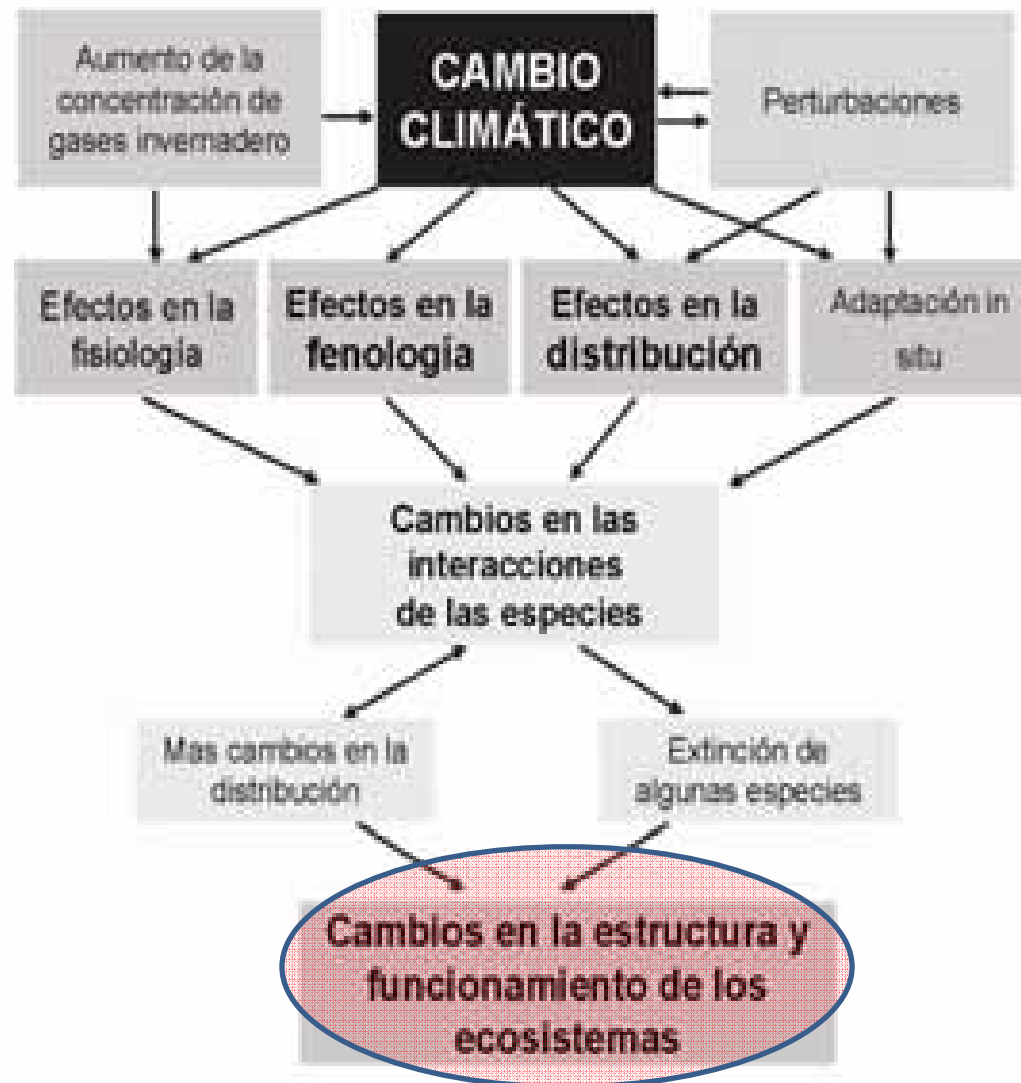


Peñuelas et al. 2004 (adapted from Hughes 2000)

# Increasing role of drought tolerance

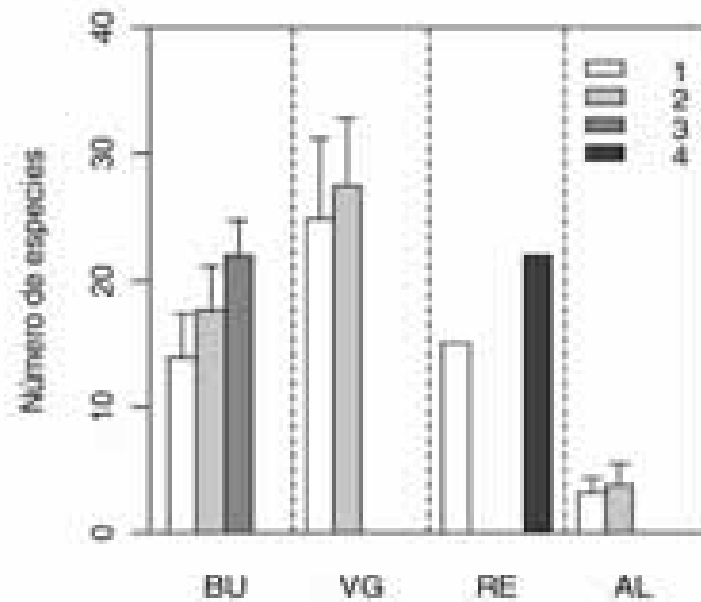






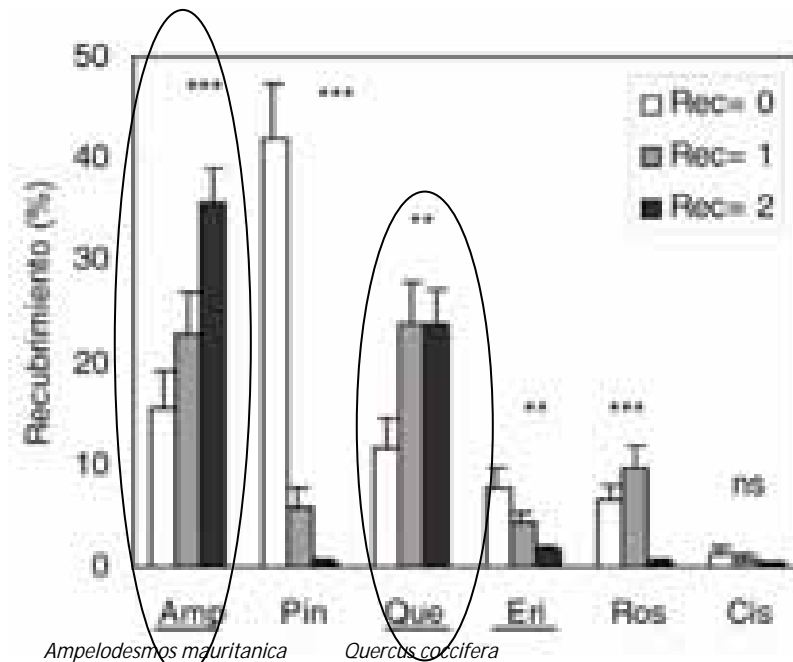
# Fire recurrence and species richness and cover

Richness (4 sites)



- Species richness is maintained with fire recurrence but not composition

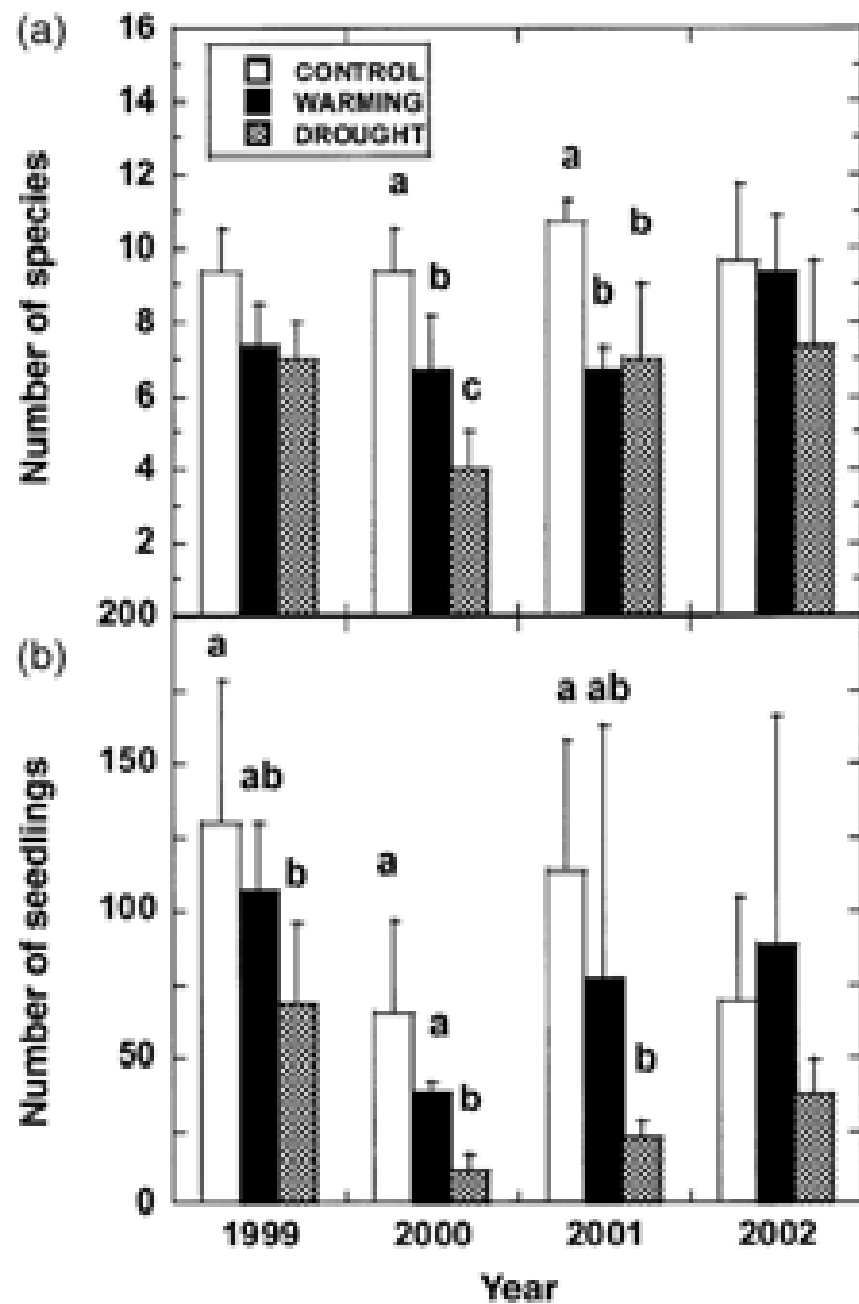
Recobrimiento



-The cover (%) of resprouting species increases with fire recurrence







# CONCLUSIONS

In Mediterranean areas, climate change is expected to:

- Increase temperature, evapotranspiration, length drought periods
- Modify the disturbance regimes
- Induce changes in the phenology and physiology of plants
- Change the distribution of some species as well as plant-plant and plant-animal interactions
- Modify the structure and functioning of forest ecosystems



**Gràcies !  
Thanks!**

<http://fidbosc.ctfc.cat>