

Atmospheric change impacts on mountains and

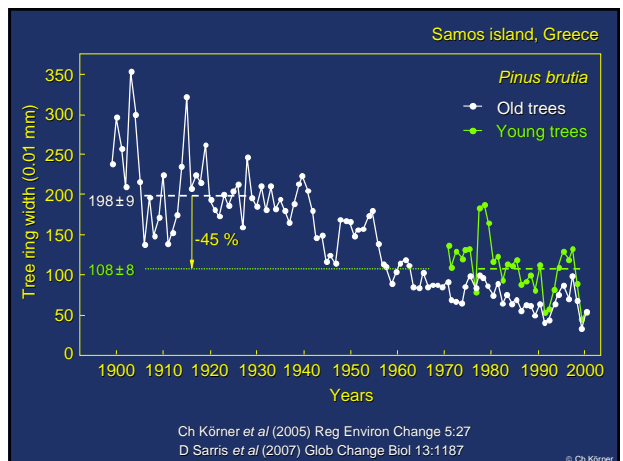
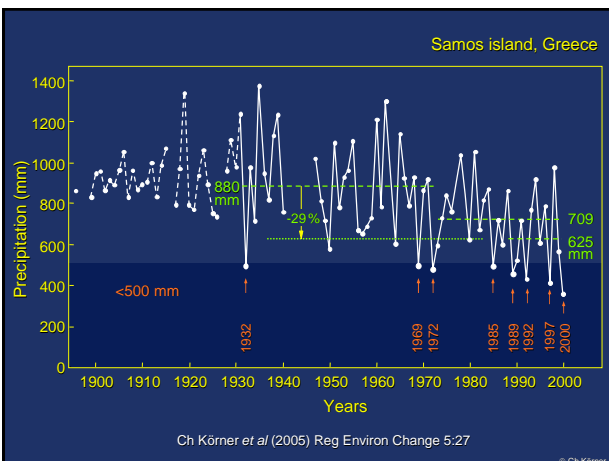
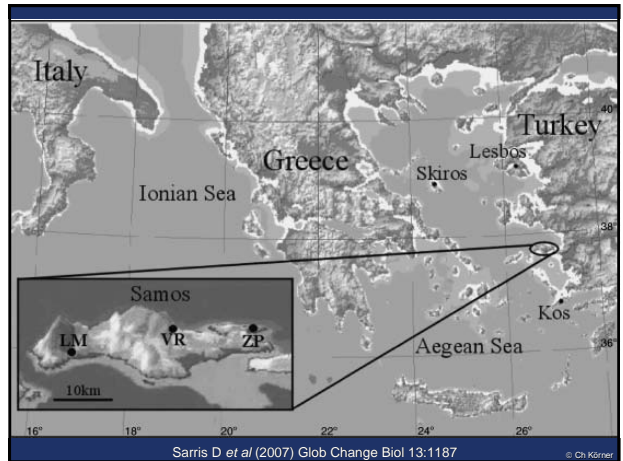
Mediterranean systems

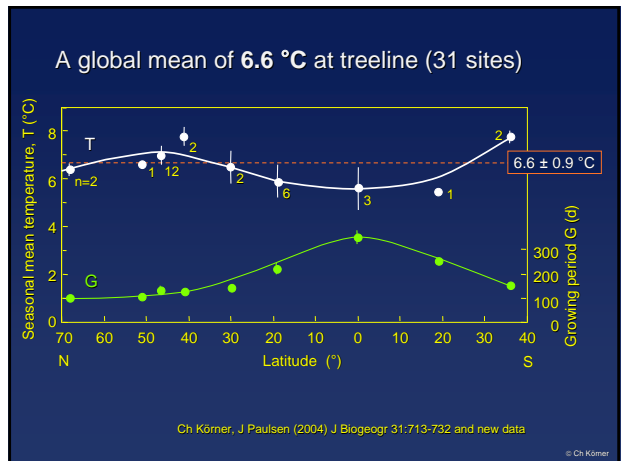
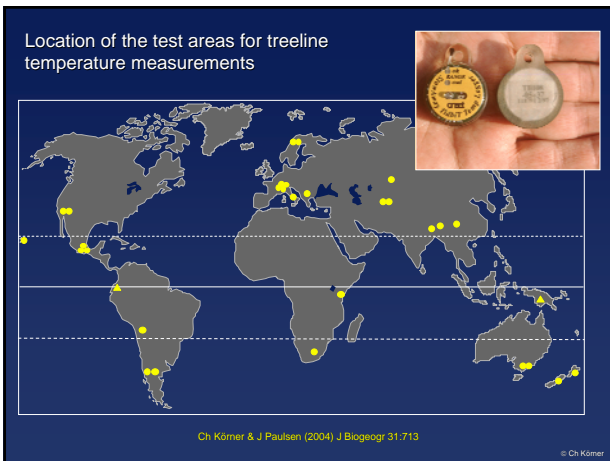
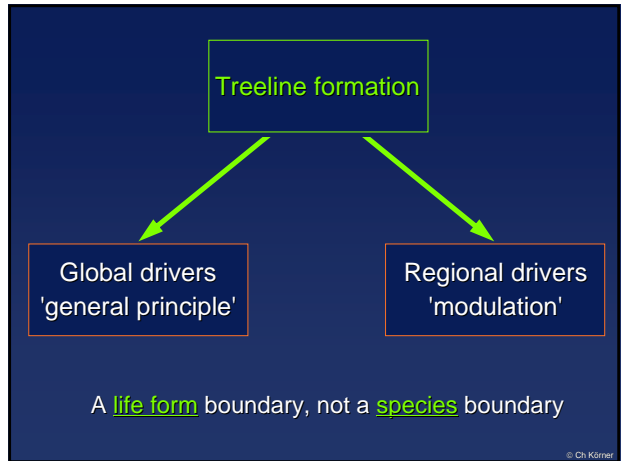
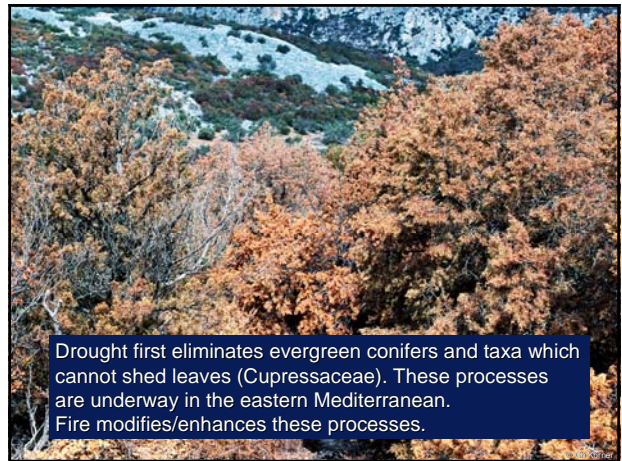
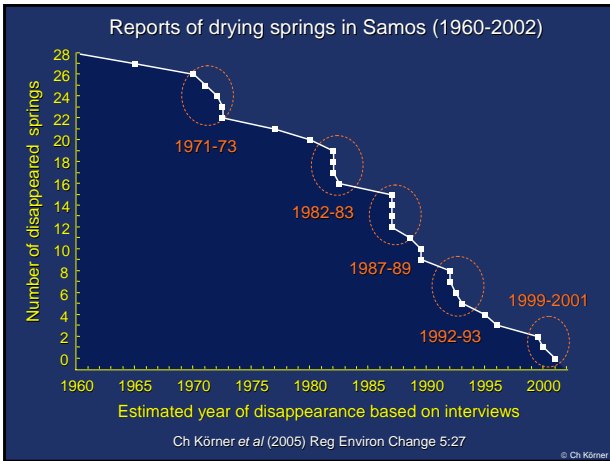
- Drought in the Mediterranean
- Warming at treeline
- CO₂-effects across ecosystems

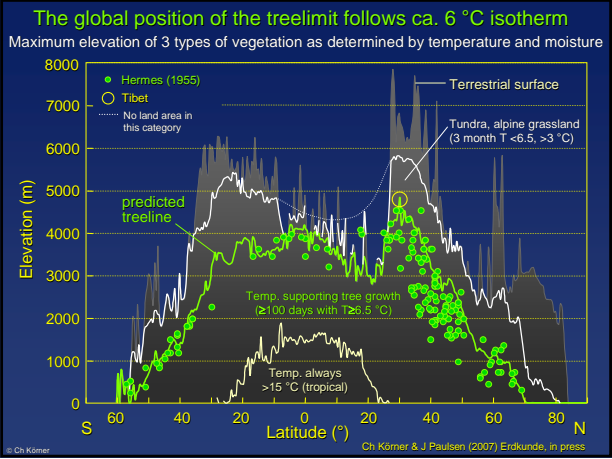
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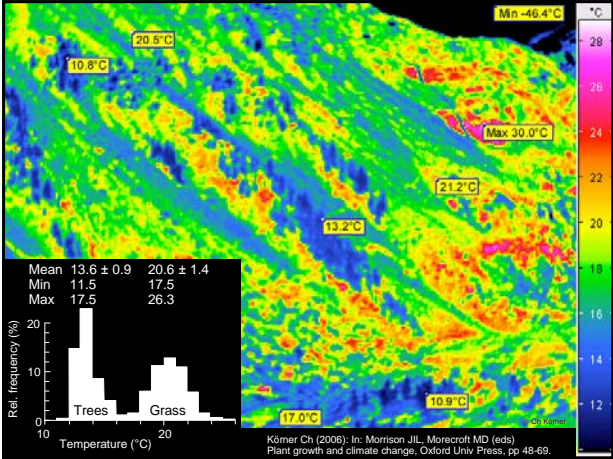
Institut d'Estudis Catalans, Barcelona, 9 November 2007



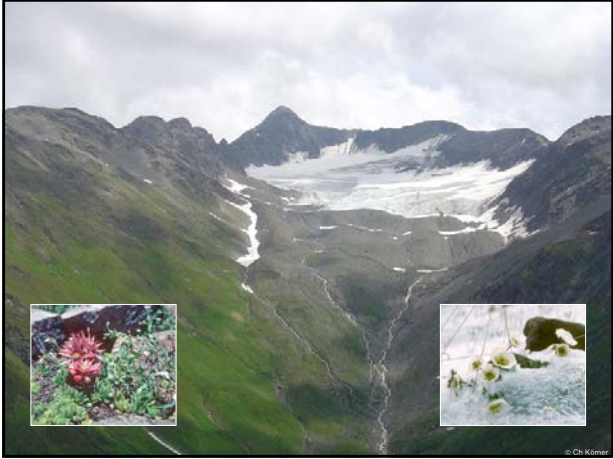


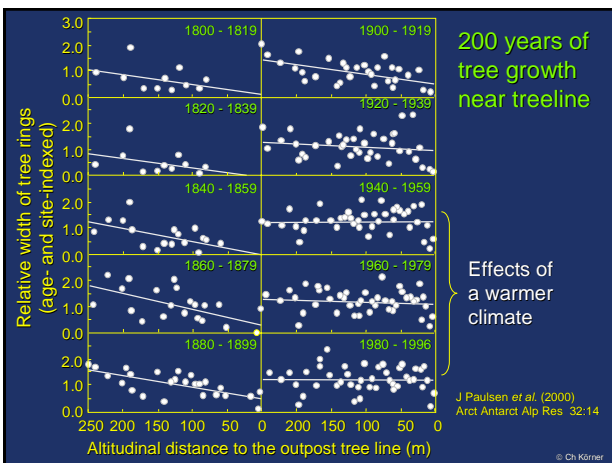
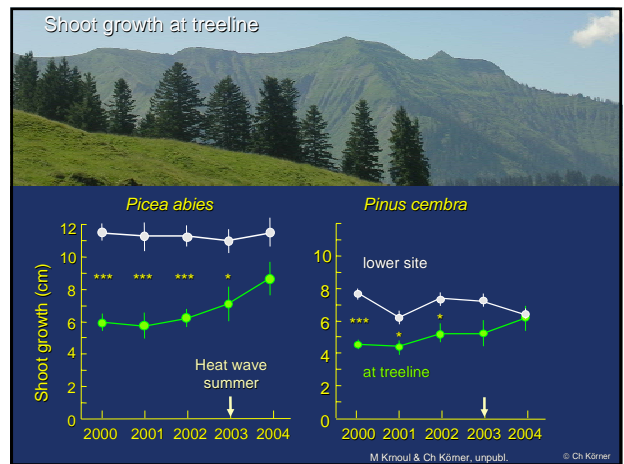
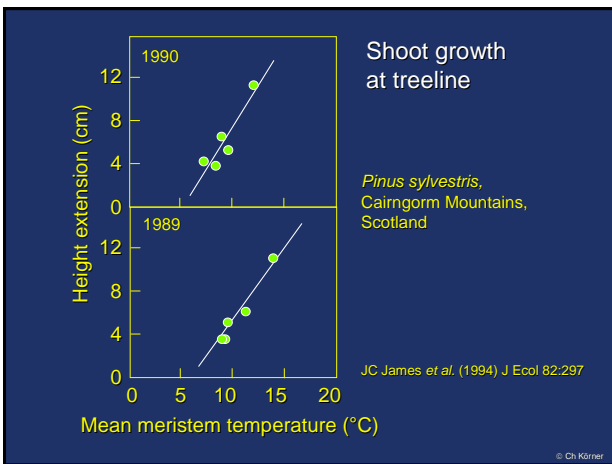
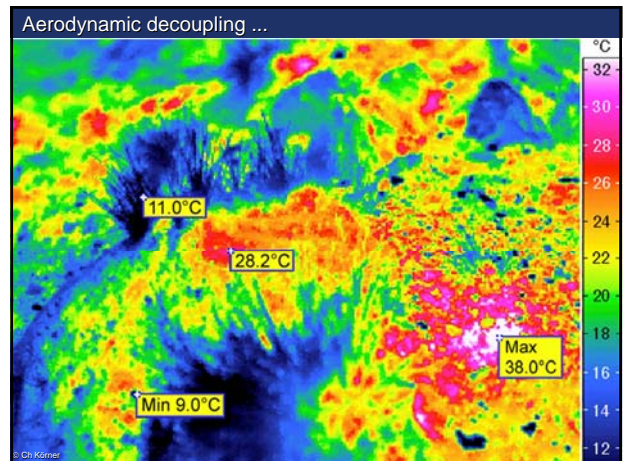
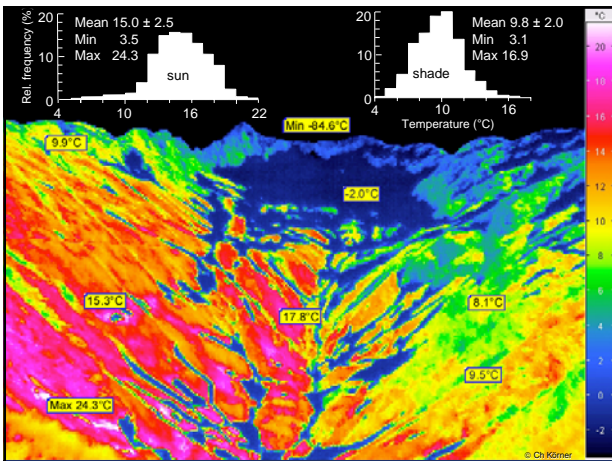


- Why are trees limited by a common isotherm?
- Why do other taxa and life forms thrive at >1000 m higher altitude?
- Are trees physiological inferior?

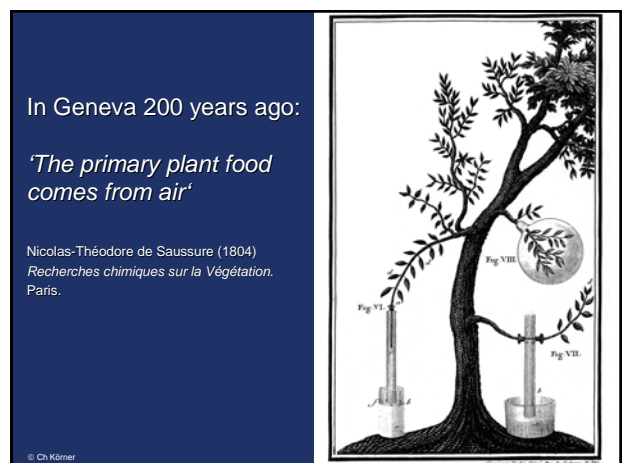
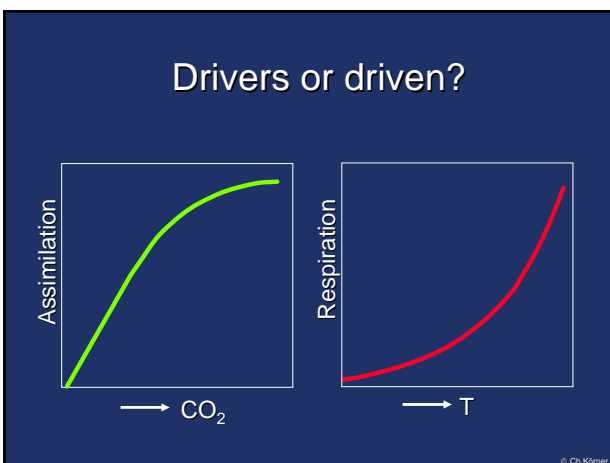
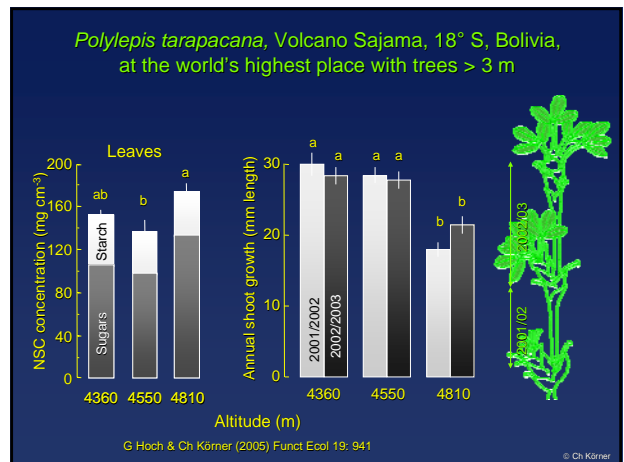
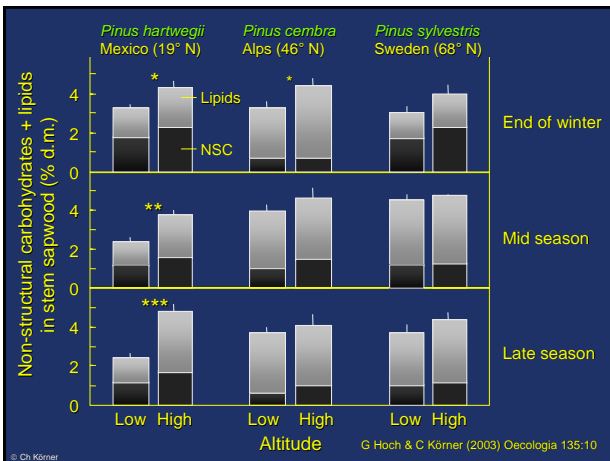


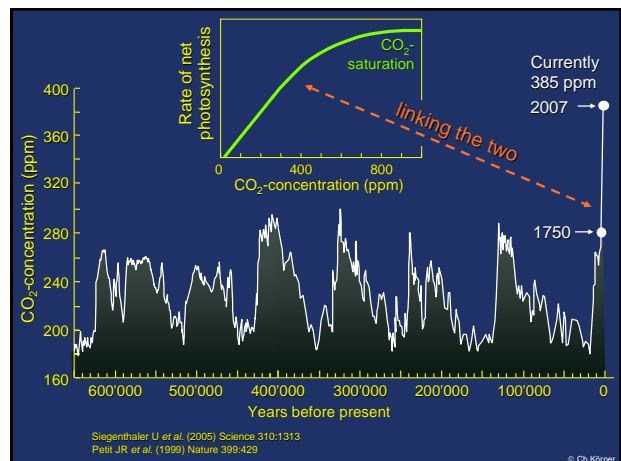
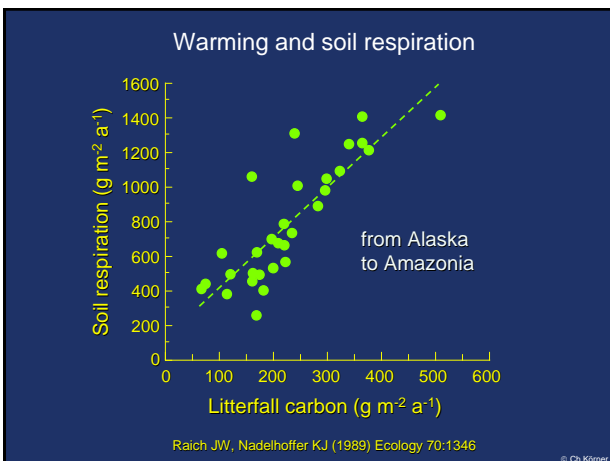
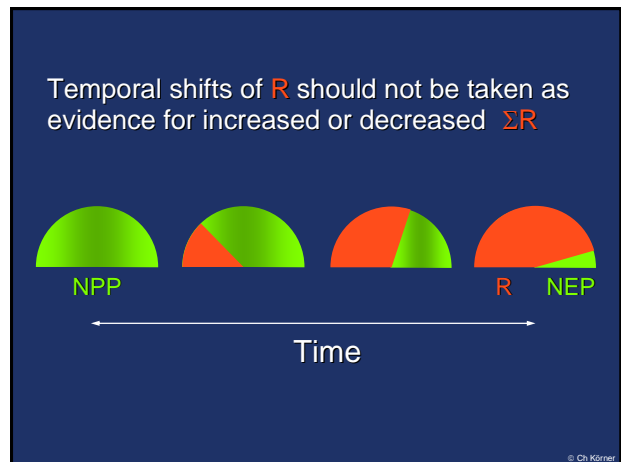
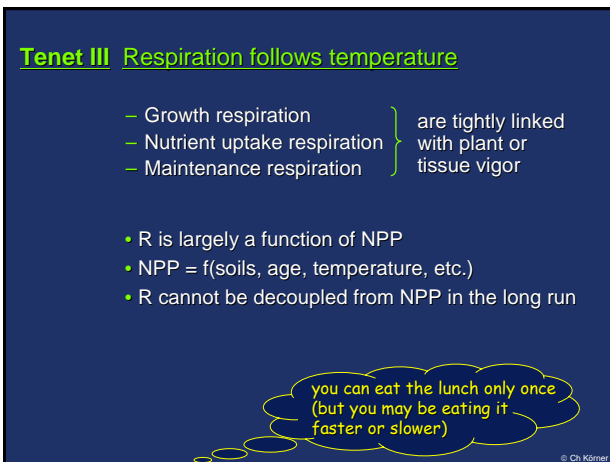
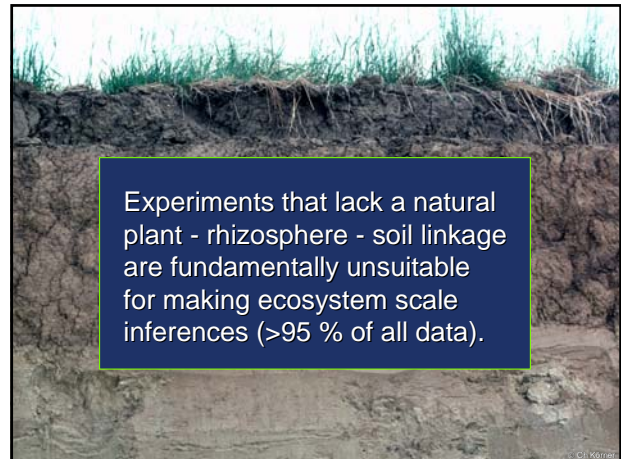
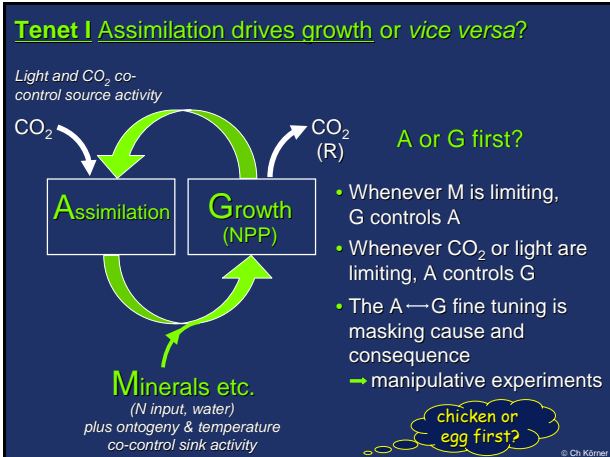
- Trees are disadvantaged by their architecture, not by inappropriate physiology.
- Aerodynamic coupling of tree crowns to atmospheric circulation.

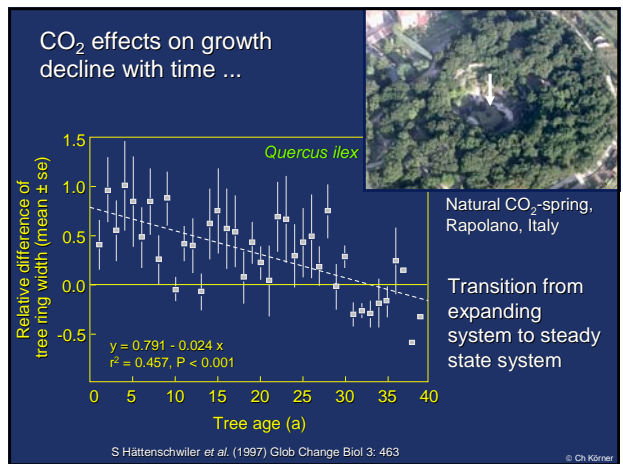
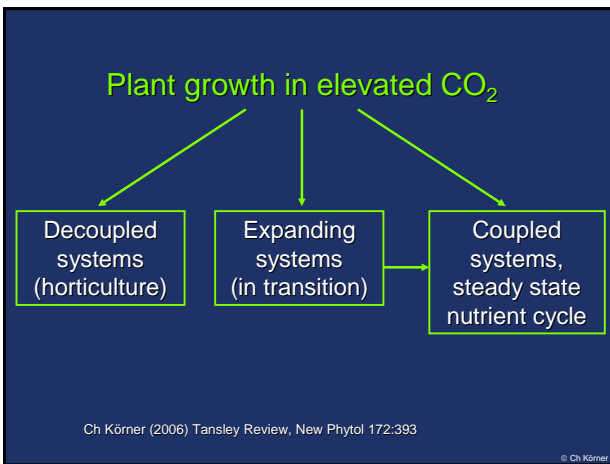
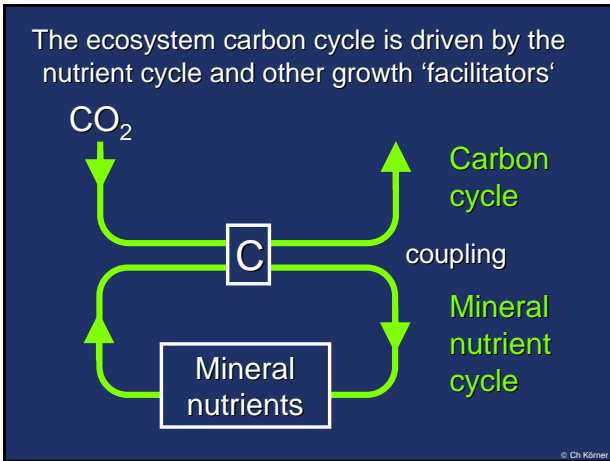


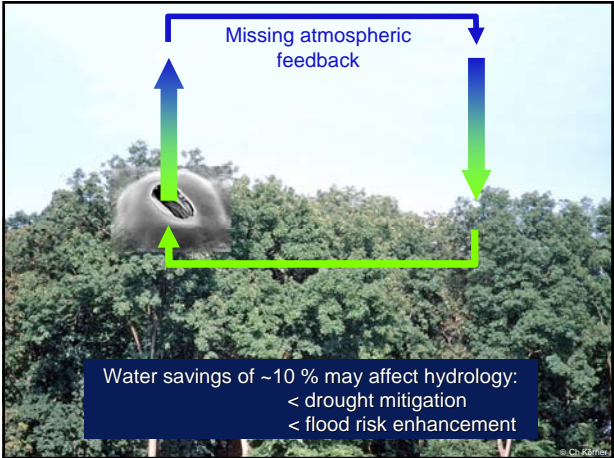
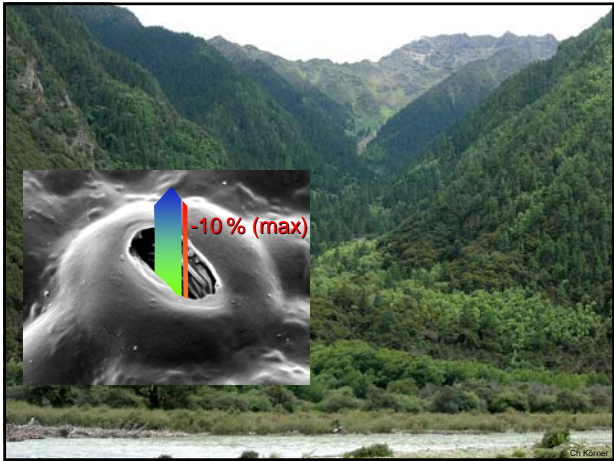
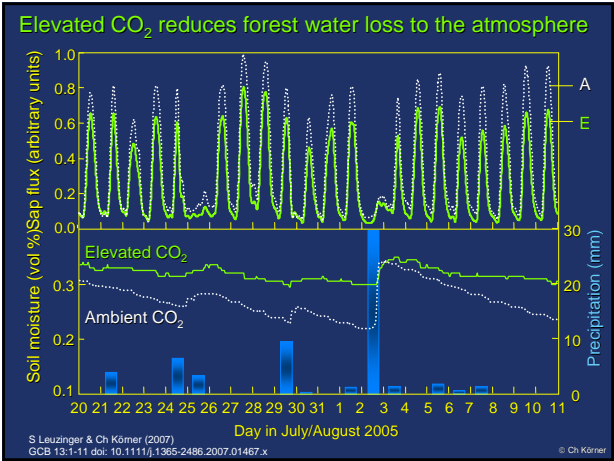
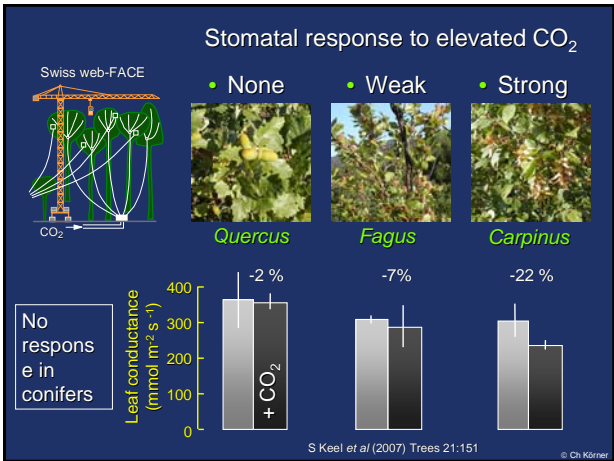
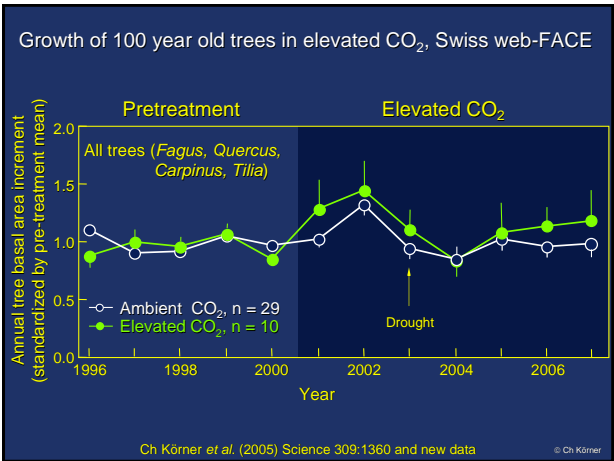


Treelines are controlled by sink activity (meristems) not by source activity (photosynthesis).









- **Increasing drought** in the Mediterranean is a reality, and species differ in their responses.
- **Climatic warming** should effect the world treelines directly and now.
- **Elevated CO₂**: natural systems likely to be carbon saturated, and biodiversity is affected (indirect effects via water relations).