

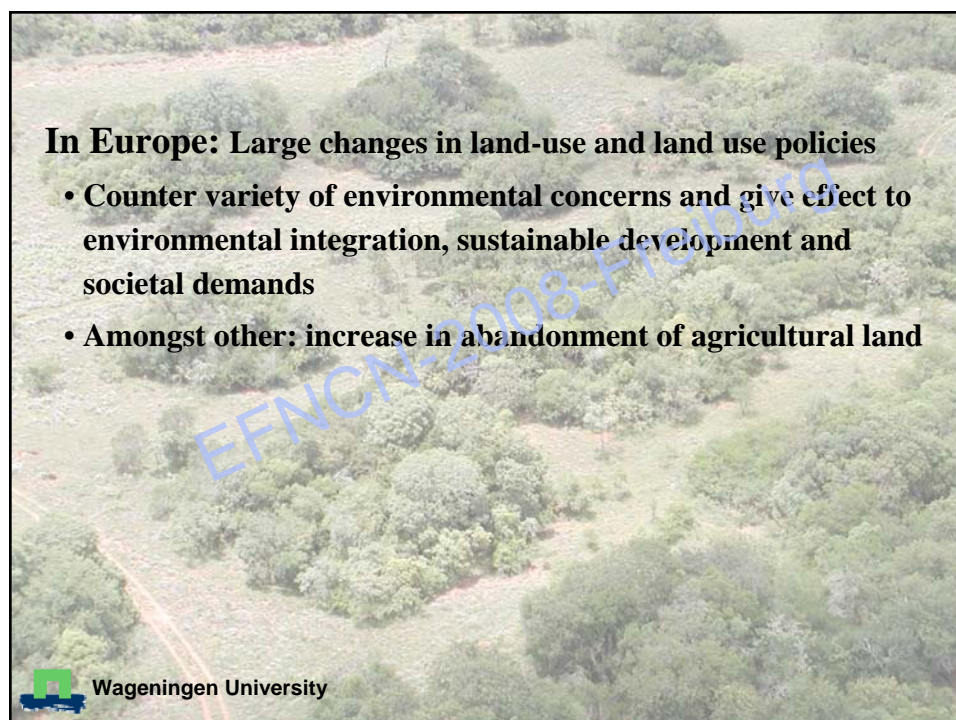


Symposium on Fire Management in Cultural and Natural Landscapes, Nature Conservation and Forestry in Temperate-Boreal Eurasia
Freiburg, Germany, 25-27 January 2008

**Fire as a tool to manage
temperate grazing systems:
Lessons to be learnt from Africa**


Claudius van de Vijver & Frank van Langevelde
(Wageningen University, the Netherlands)

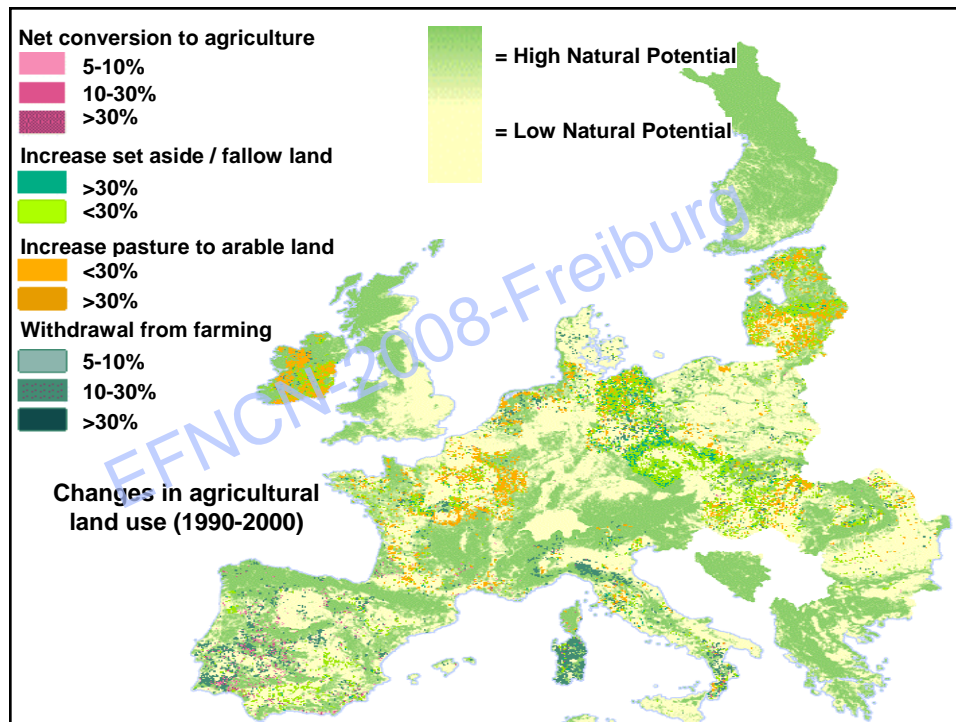
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In Europe: Large changes in land-use and land use policies

- Counter variety of environmental concerns and give effect to environmental integration, sustainable development and societal demands
- Amongst other: increase in abandonment of agricultural land

 Wageningen University



Abandoned Agricultural land

- Large areas set aside as (semi) natural areas
 - Improve the situation with respect to:
 - System heterogeneity and (bio)diversity
 - Fragmentation of natural systems
(EU environmental issues)

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Management of (semi) natural areas

- Sustainable (environmental and economic)
- Introduction of herbivores (very often semi domesticated)
 - Reduce biomass (fire hazard)
 - Selective foraging allows for increase heterogeneity / biodiversity
 - Increase natural value (appeal)



Management of (semi) natural areas

- Problems:
 - Lack of high quality forage (animal starvation)
 - High fuel loads (unpalatable forage)
 - Bush encroachment



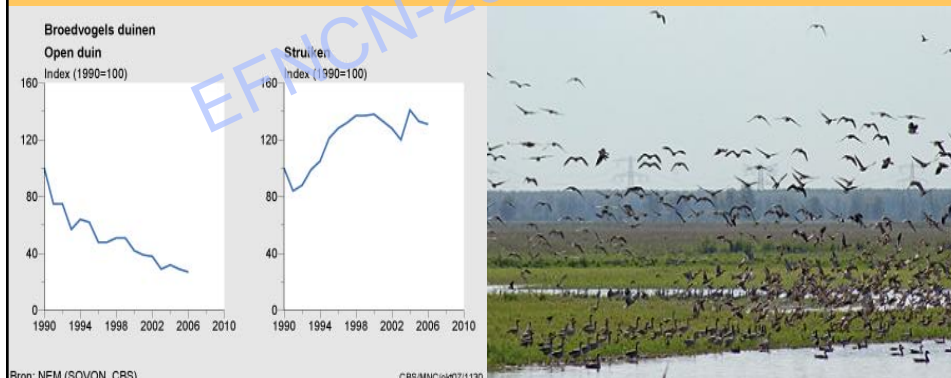
Bush encroachment:

- Increasing dominance of bushes, scrub and trees
- Consequences:
 - Increased fuel load



Bush encroachment:

- Increasing dominance of bushes, scrub and trees
- Consequences:
 - Increased fuel load
 - Decline in diversity and desired natural habitat

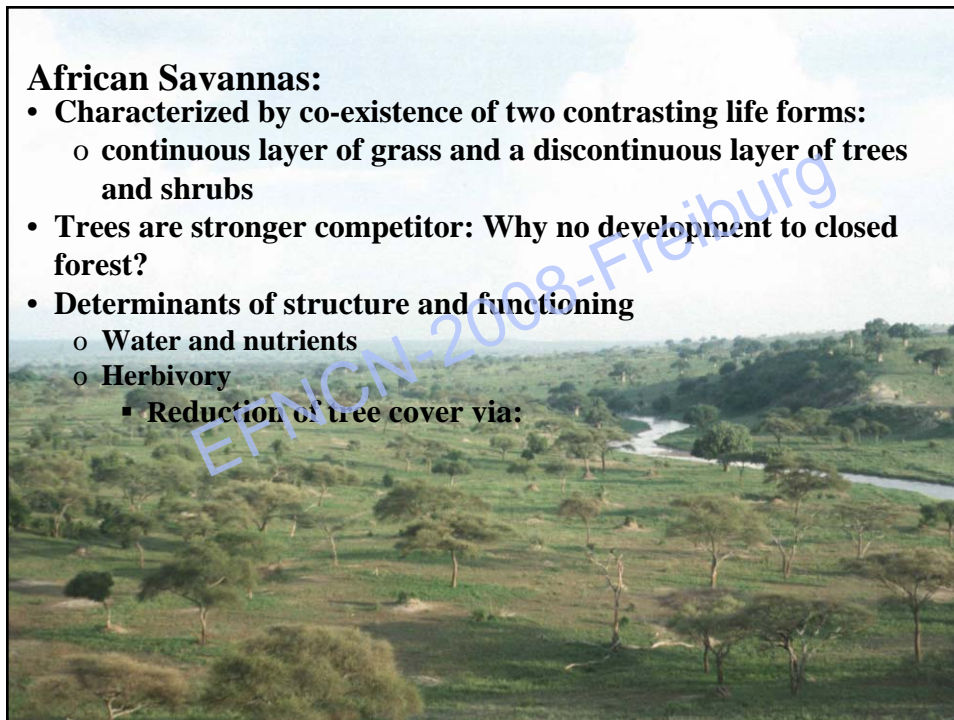


Management of (semi) natural areas

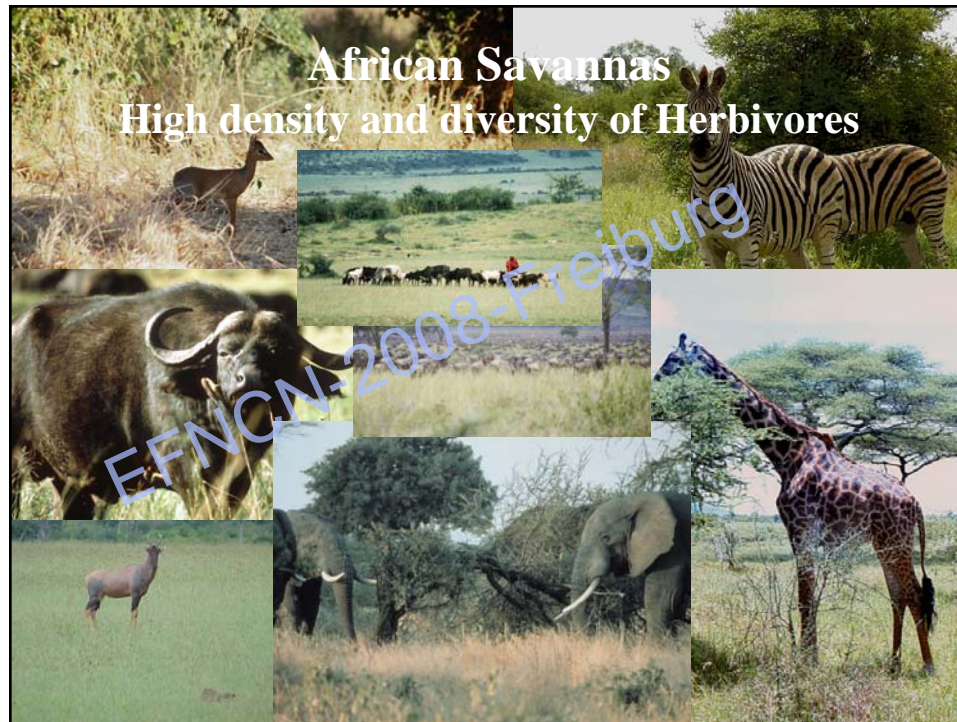
- **Alternative, additional management strategy required**
- **Bush encroachment is an issue in many grazing systems**
- **Learn from these systems**
 - **underlying mechanisms / processes (EU policy requirement)**
 - **management options**
- **The African Savanna Biome**

African Savannas:

- **Characterized by co-existence of two contrasting life forms:**
 - **continuous layer of grass and a discontinuous layer of trees and shrubs**
- **Trees are stronger competitor: Why no development to closed forest?**
- **Determinants of structure and functioning**
 - **Water and nutrients**
 - **Herbivory**
 - **Reduction of tree cover via:**

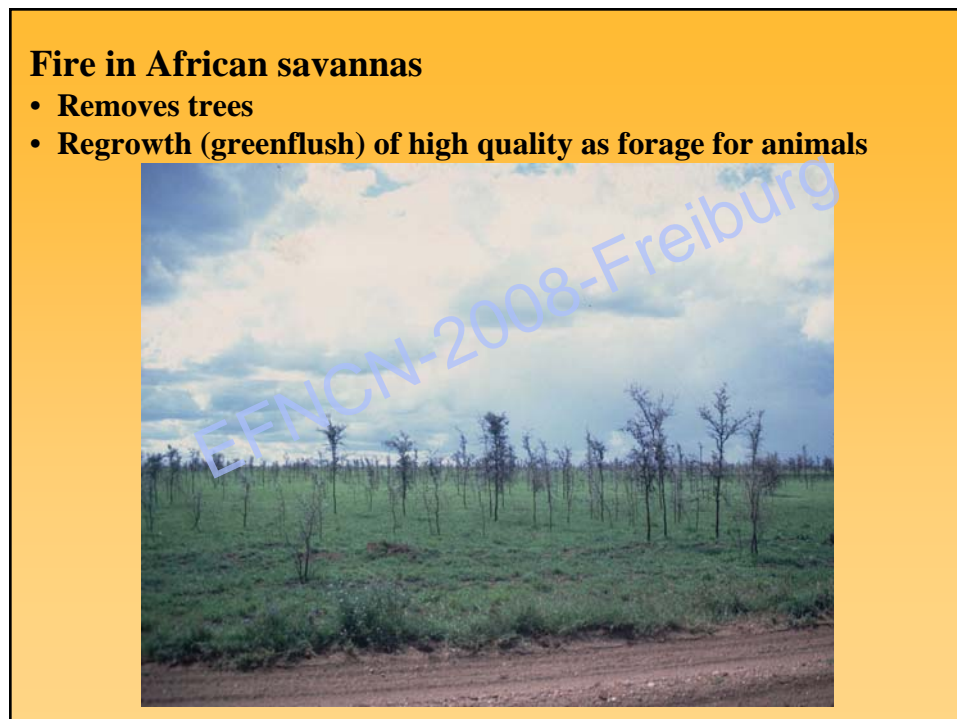
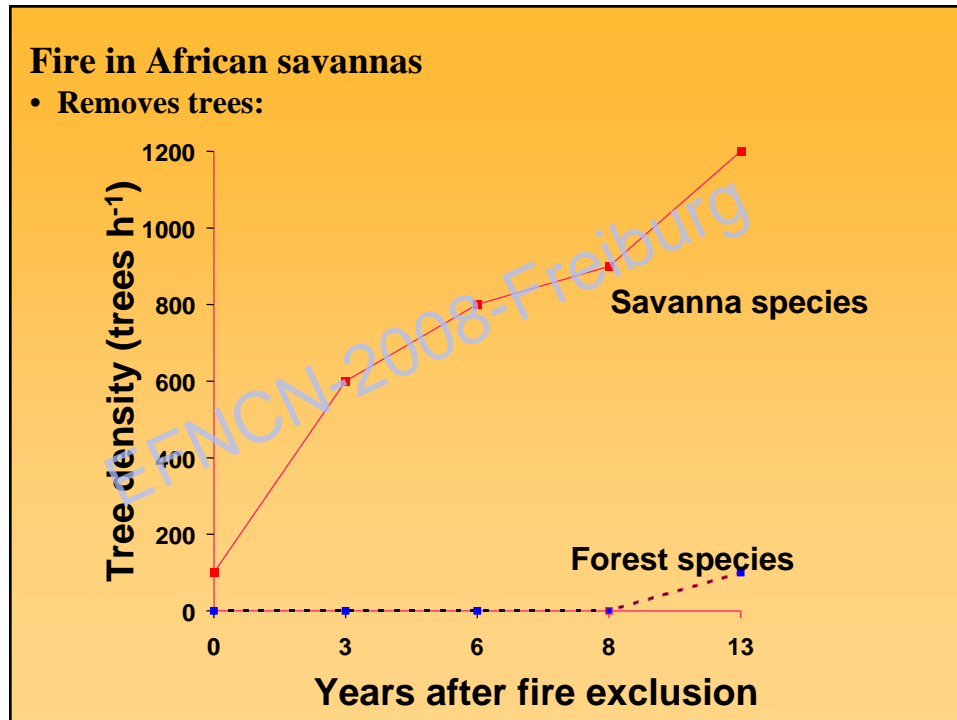






African Savannas:

- **Characterized by co-existence of two contrasting life forms:**
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- **Why no development to closed forest**
- **Determinants of structure and functioning**
 - Water and nutrients
 - Herbivory
 - Fire (> Pastoral economies)

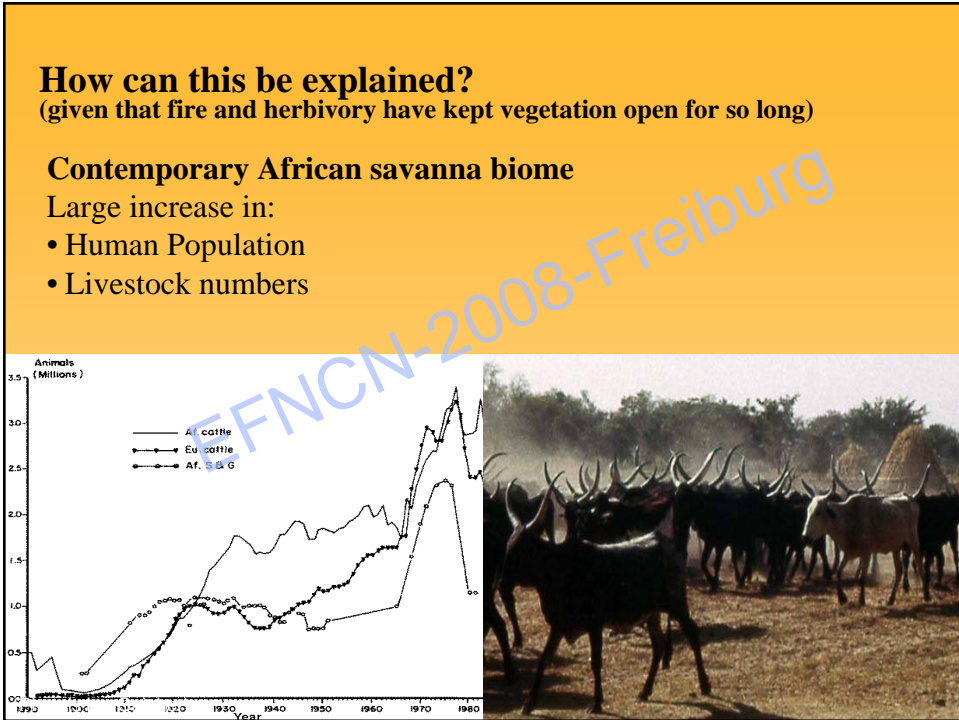
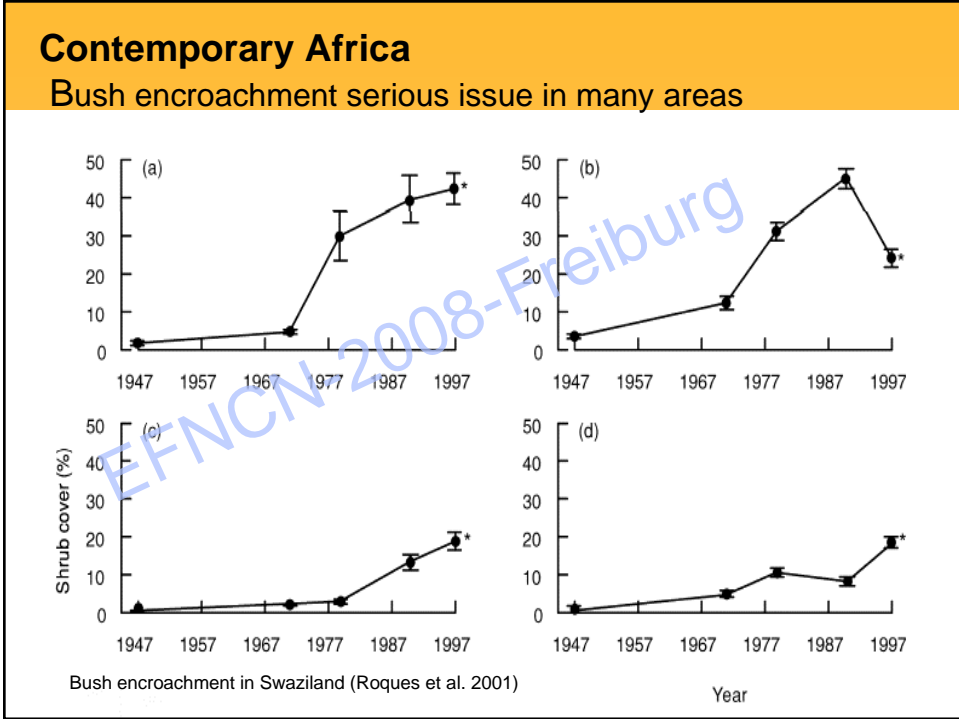


Fire in African savannas

- Removes trees
- Regrowth (greenflush) of high quality as forage for animals)
- **Given correct fire regime: increase in heterogeneity / biodiversity**
- **Thus, fire and herbivory combined ideal option to manage these new (semi) natural systems in Europe?**

Management of (semi) natural areas in Europe with fire?

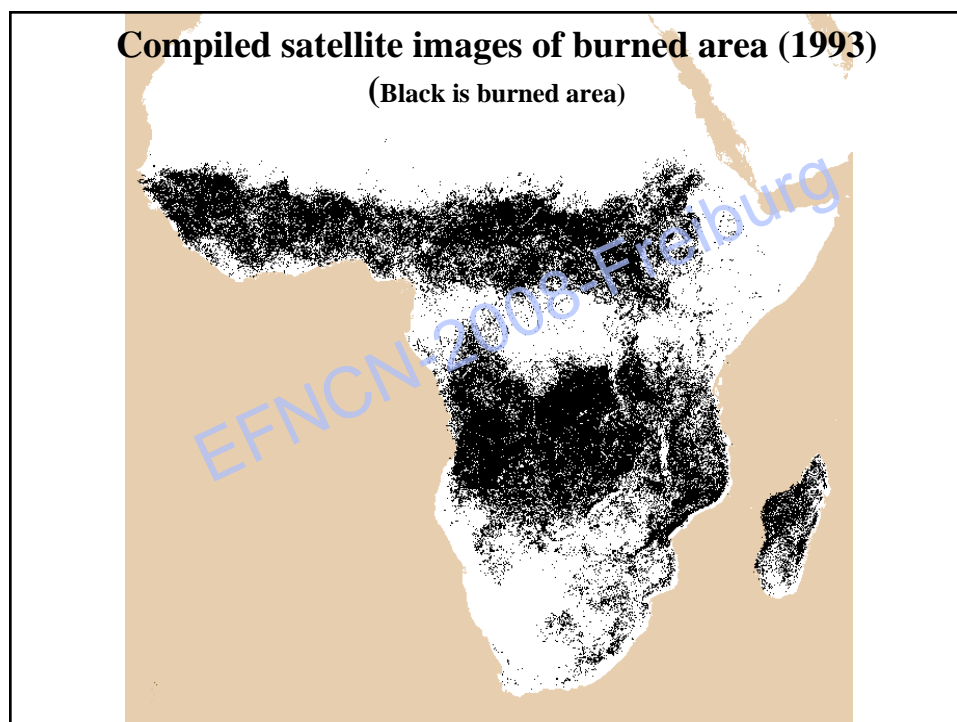

- **Social acceptability?**
- **Understand underlying mechanisms (EU policy documents)**
- **Rightfully so otherwise we might end up in an undesired state when implementing the management strategy**
- **Lets look at Africa again**



How can this be explained?

Contemporary Africa
Large increase in:

- Human Population
- Livestock numbers
- Increased (mis)use of fire
 - Out of season burning (end wet season)
 - High frequency (often annual)

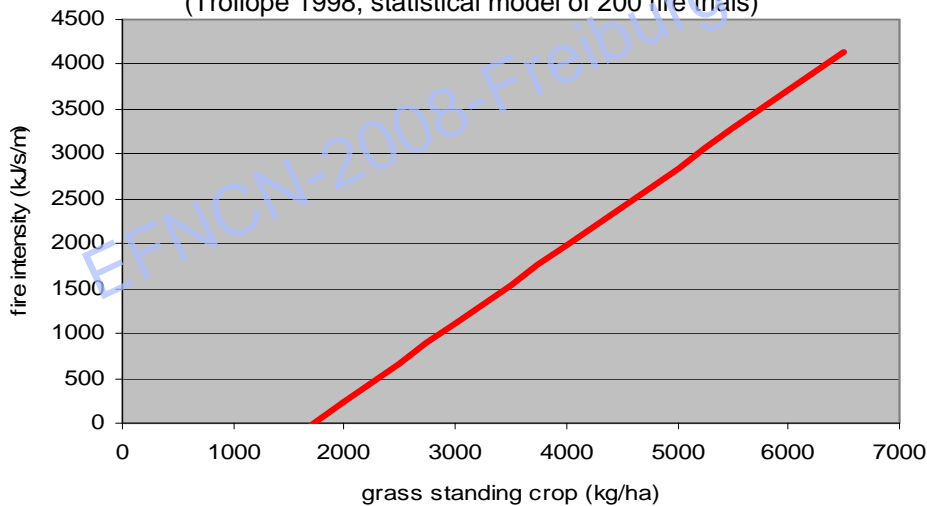


Consequence

- Decline in grass biomass (fuel load)
- Consequent decline of the effect of fire on trees since:

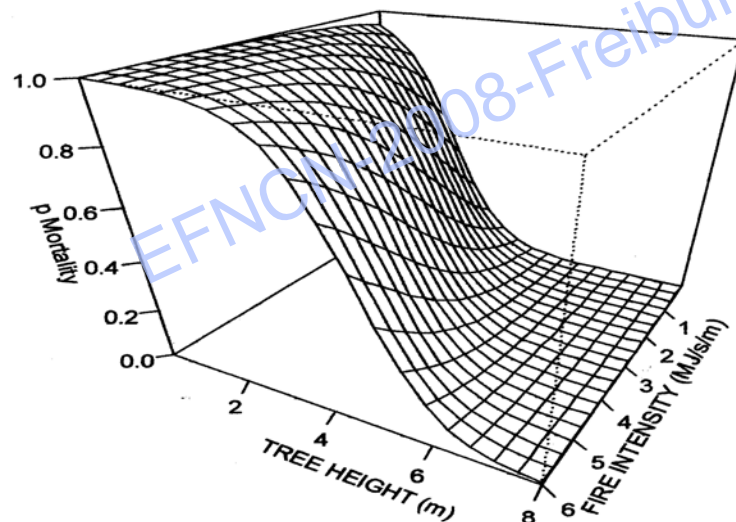
1) Relation between grass biomass and fire intensity

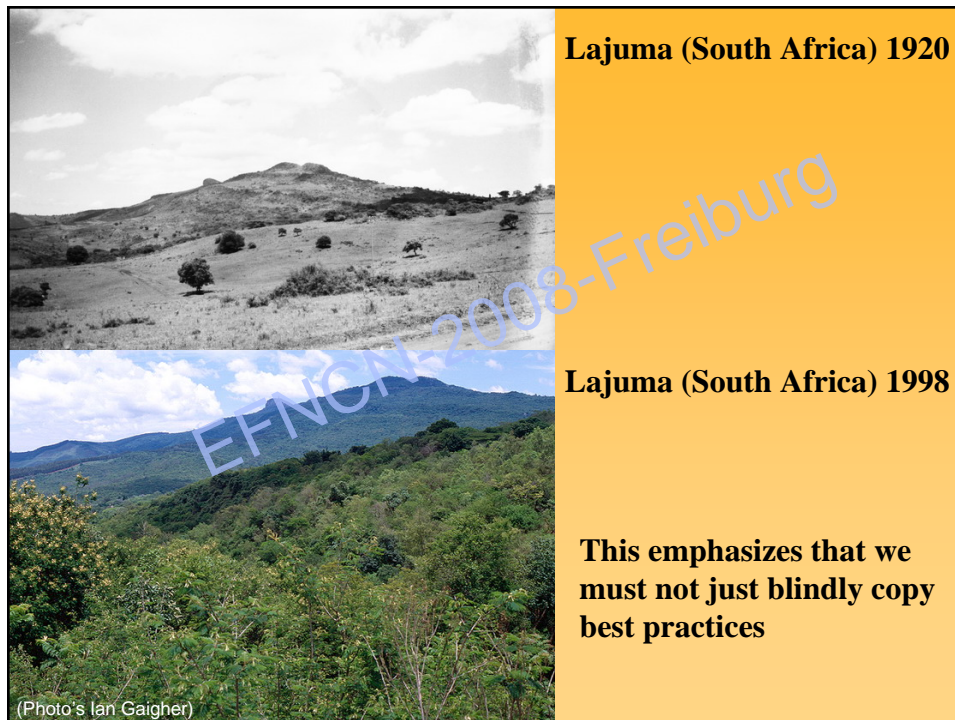
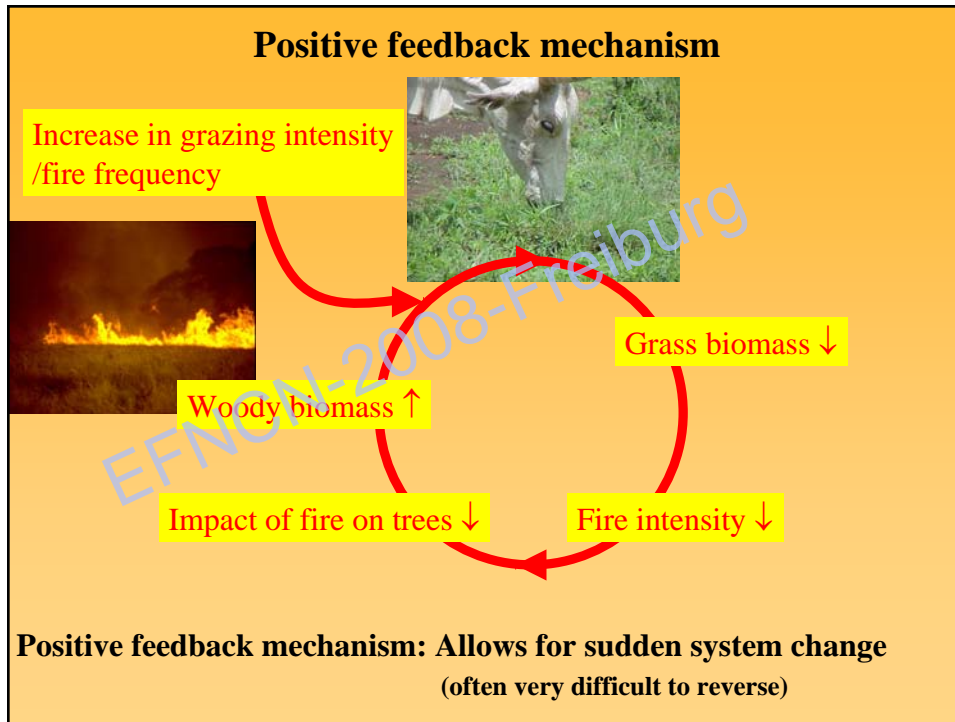
(Trollope 1998, statistical model of 200 fire trials)



2) Relation fire intensity and top kill of trees in relation to fire intensity and tree height

Top kill of trees in relation to fire intensity and tree height
(Trollope and Potgieter data)





Fire a management tool in (semi) natural areas in Europe?

Yes, I do think so given:

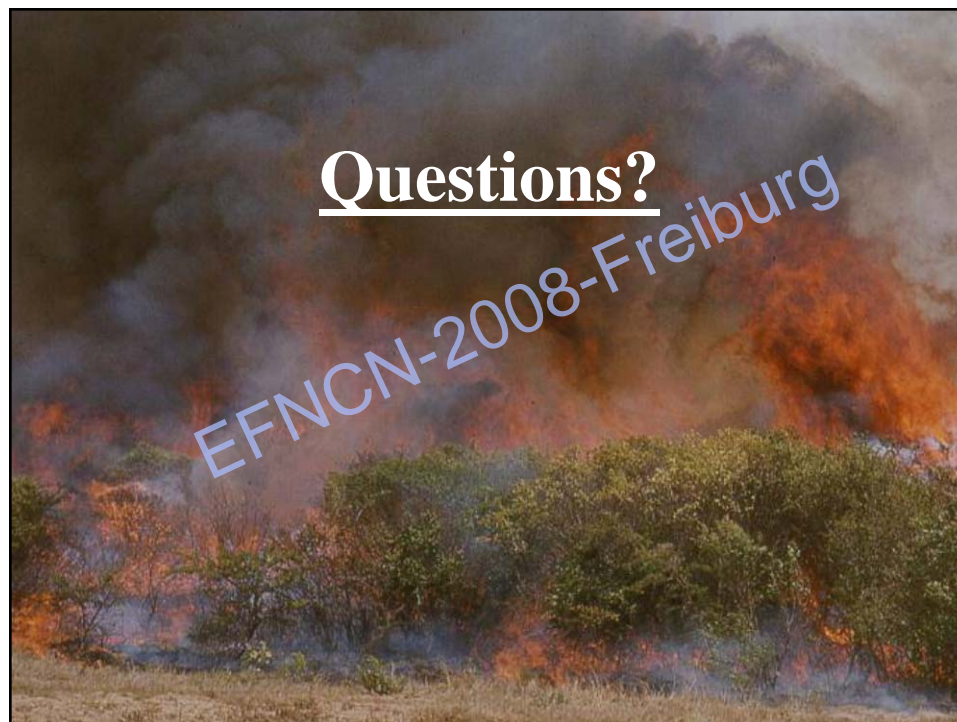
- **Understanding of:**

- Which (positive) feedback mechanisms apply to our systems
- Appropriate fire regime

- **Actual feasibility:**

- Political and public acceptance
- Local knowledge and infrastructure

Call for research on the above in a European context



Freiburg, Germany, 25-27 January 2008

Postgraduate Course
Hot Topics and Burning Issues
Fire as a Driver of System Processes: Past, Present, and Future
30 March – 5 April 2008
Wageningen, the Netherlands

SCOPE OF THE COURSE
 This one-week course introduces participants to current theories, thinking and practice in the field of fire science, and looks ahead to future developments and challenges, particularly in the context of global change. In addition, participants will be introduced to emerging issues and challenges in policy and management.

The course is meant for PhD students, post-doctoral researchers and staff for whom fire is either a specific focus of research or a factor in their studies, or for those who are looking at the influences and management of natural "disturbances" in social-ecological processes.

MAIN TOPICS TO BE ADDRESSED

- Fire and civilization
- The global extent of burning / scaling issues
- Effects on species, population, communities and ecosystems
- Fire, atmospheric chemistry and global climate change
- Mediterranean fire ecology and regional climate change
- Integrated management of fire and fire-prone environments

SPEAKERS

- Stephen Pyne (Arizona State University, USA)
- Johan Goudshom (University of Amsterdam, the Netherlands)
- Chris Justice (University of Maryland, USA)
- William Bond (University of Cape Town, South Africa)
- Mary Scholes (University of the Witwatersrand, South Africa)
- Guido van der West (Vrije Universiteit Amsterdam, the Netherlands)
- José Moreno (University of Castilla-La Mancha, Toledo, Spain)
- Johann Georg Goldammer (Global Fire Monitoring Center, Max Planck Institute for Chemistry, Germany)

FURTHER INFORMATION
 See: <http://www.pe-rc.nl> (under courses)
 or contact Dr C. van de Vijver (Claudius.vandeVijver@wur.nl)
 Tel. +31 (0)317-485116

COSTS

PhD participants from PE&RC, Freiburg, Max Planck Institute for Chemistry and UNU	€ 200,-
All other PhD students, and staff from PE&RC, Freiburg, Max Planck Institute for Chemistry and UNU	€ 500,-
All other participants	€ 800,-

- Fee includes course materials, coffee, tea, lunches, field trip and dinners
- Cost for Bed & Breakfast is not included, € 70 per person per night extra

ORGANISERS

- Dr. Claudius van de Vijver (Wageningen University, the Netherlands)
- Prof. Peter Frost (New Zealand)
- Prof. Dr. Dr. h.c. Johann Georg Goldammer (Fire Ecology Research Group/Global Fire Monitoring Center (GFMC), Max Planck Institute for Chemistry, c/o Department of Forest and Environmental Science, Freiburg University, Germany / United Nations University)

Under the auspices of: Graduate School Production Ecology and Resource Conservation (Wageningen University), Global Fire Monitoring Center (Max Planck Institute for Chemistry) and United Nations University

Logos: Wageningen University, Max Planck Institute for Chemistry, United Nations University, and a globe logo with 'PRODUCTION ECOLOGY & RESOURCE CONSERVATION' text.

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