

# SUSTAINABLE MANAGEMENT MODEL FOR THE PRESERVATION OF VALUABLE OPEN MOUNTAIN AREAS: THE **OPEN2PRESERVE** PROJECT

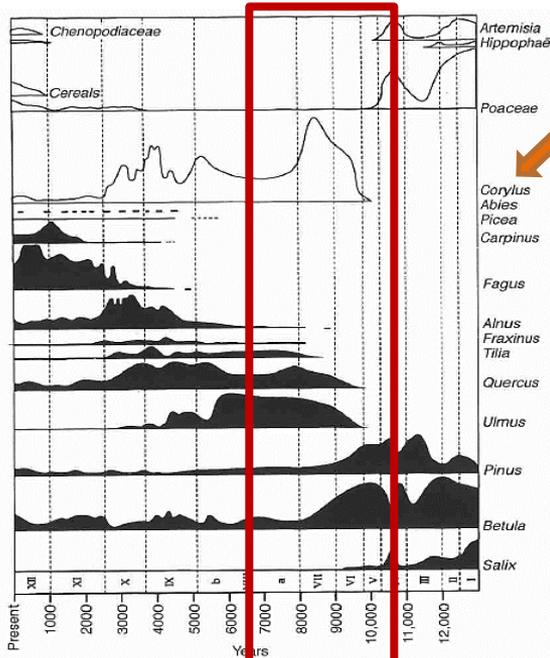
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# The natural landscape: a long interaction among fire and herbivores



After the last glaciation a **Park-Grass landscape** dominated in Europe (Vera, 2002). Suggested by:

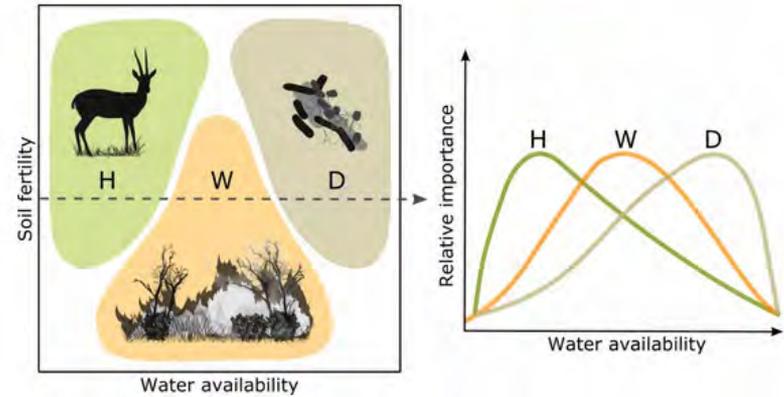
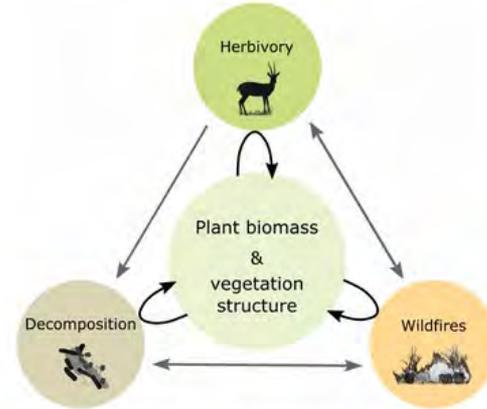
- ✓ High percentages of forest edge pollen (Hazel)
- ✓ Lack of relationship between non-tree pollen and the current cover of grasslands

**Two disturbances consuming vegetation, fire and herbivory, key in the creation and maintenance of this mosaic.**

Fossil pollen records in Lutter Lake, Germany



Fire and herbivory are interconnected because **they share the same resource, the vegetation**. High herbivory keeps plant biomass low, which limits the size and intensity of fires.



Cycle of matter, G-Pausas & Bond, 2020

# Fonelas fossil record (Guadir-Baza basin, Andalusia)



Late Pliocene fossil record of large mammals

60% of the total fossils are herbivores

**Chronology and species** of mammals **unknown** in Western Europe

# Pyric Herbivory (PH)



Promote herbivory through the use of fire by **emulating the natural processes** that created and maintained the landscape (Fuhlendorf, 2009).

The key is the **combination of practices**. Rebuild landscape re-engaging these two disturbances

- First reduction of vegetation through a **technical burn**
- A **multiyear targeted grazing plan** to reduce lignified resprout and increase the grassy component.

Is a **tool of restauration of abandoned landscapes** with intense encroachment processes, and allows:

- Fuels control (biomass and continuity) as a preventive measure against mega-fires
- Maintenance of mosaic landscapes
- Increase of biodiversity linked to habitat heterogeneity





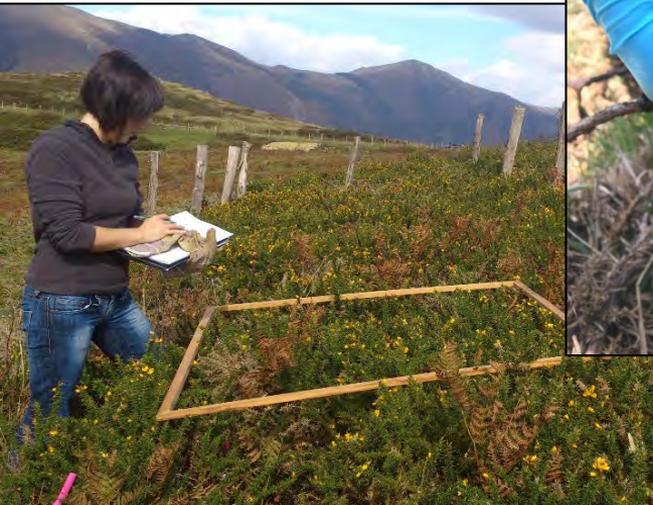


Monitoring of environmental impacts

Livestock body condition

Monitoring of results for an adaptative management

Testing of technologies



# Lessons learned for PH implementation



## On the use of fire in the landscape



Fire regulation	Burn categorisation	Burning permissions
Very different legislations among regions. Necessary to develop a <b>common regulatory framework that recognizes technical fires as a preventive tool for landscape restauration.</b>	Higher fuel accumulations and CC increase the energy released by burns and their complexity. <b>Categorisation allows to estimate the risk and prepare a proper burning plan.</b>	Delays in permissions limit useful days for burning. There is a need to <b>reduce bureaucracy and to establish a facilitator</b> for the administrative procedures linked to PH.

## On the environmental role of domestic herbivores



Specific regulations	Specific regional programs	Contracts around PH
Specific regulations to facilitate the function <b>of the livestock in environmental grazings</b> .	Need of <b>specific regional programs</b> for the use of PH for restauration purposes with <b>full-time personnel involved</b> and with an <b>anchoring in the territory</b> . Previous experiences (Andalusia, France).	The process should be set out in an <b>agreement which establishes an action plan, a contingency plan and a target-based payment system</b> . All types of agreements should be contemplated.

## On the ownership



Property and access to land	Property and access to livestock
<p>Ownership can constraint the actions to be carried out. In critical areas, <b>general interests must prevail over private</b>. Legislation should be developed to facilitate actions in areas of high risk of fire spread.</p>	<p>Extensive livestock is in decrease. Animals are part of large herds that cannot be managed by PH or they are not suitable for that purpose. Use <b>creative measures to promote access to the proper livestock</b>.</p>

## Relationship between actors in the territory



Cooperation between public administrations	Promotion of local agreements involving different actors	Promotion of sectoral associations around PH
Departments in the Administration usually work independently on similar goals. <b>PH requires multidisciplinary and collaborative planning between public departments</b>	Landscape restauration is a matter of all. <b>Need to reach agreements with all the agents in the territory.</b>	Individualistic behavior of farmers and difficult communication in remote areas. <b>Need to encourage knowledge sharing around PH and facilitate communication and networks of trust and support.</b>

## Training in PH



### The Fire practice

Some areas maintain traditional burns which involve farmers, in others burns are only carried by specialized teams. **The ban of the practice leads to a loss of knowledge by herders. Need to invest in training in the use of technical fire and in the creation of mixed regional crews.**

### The Shepherding profession

Europe loses shepherds and their knowledge in managing herbivores in the landscape. A **multidisciplinary approach is required to promote the profession** which focuses on capacitation, on improving farm profitability and on guaranteeing the essential services.

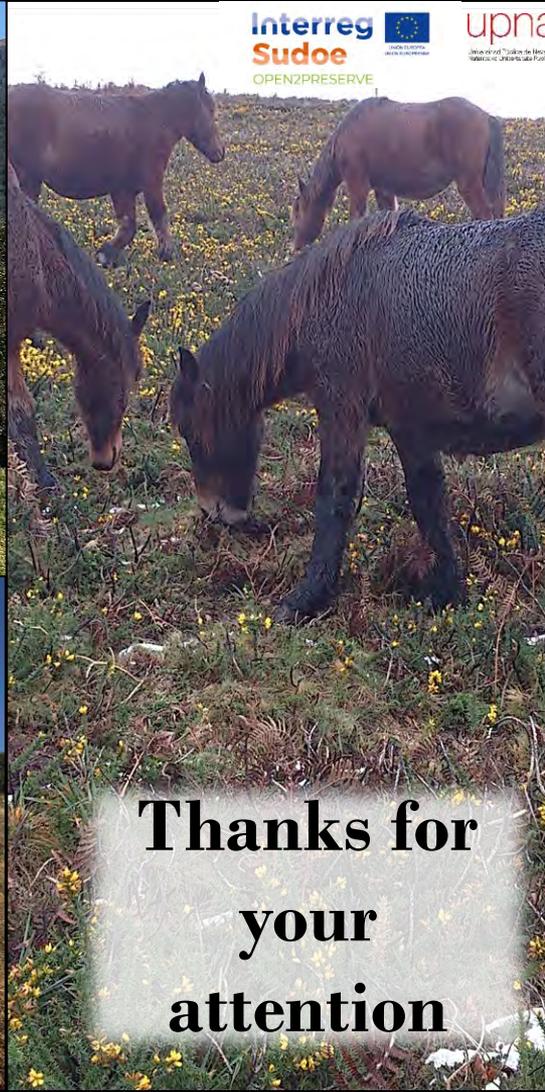
### Training of Trainers

There is no formal training in the field of **fuel management and creation of resilient landscapes**. There is an opportunity for job creation linked to this capacitation.

## Valorisation and funding of PH



Business devoted to restauration	Payment for the practice	Funding
<p>The objective of farms is the animal product. Despite sharing objectives, some managing decisions will depend on the top priority (animal product vs. environmental function). <b>Farms with a primary environmental focus are needed.</b></p>	<p>PH costs very variable according to regions and situations. <b>Economic approximations are needed to determine how PH is valued and how it should be paid for.</b></p>	<p>Funding is mostly assumed by regional governments. <b>PH increases pasture eligibility coefficient, but not specific aids are still provided by CAP.</b></p>



**Thanks for  
your  
attention**