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Towards integrated fire management in the EU, from prevention and early-response to post-fire recovery strategies

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Towards integrated fire management in the EU, from prevention and early-response to post-fire recovery strategies

Workshop on Forest Fire Risk Management
Gulbenkian Foundation, Lisbon (Portugal)
15-16 February 2018



Integrated Fire Management



Definition



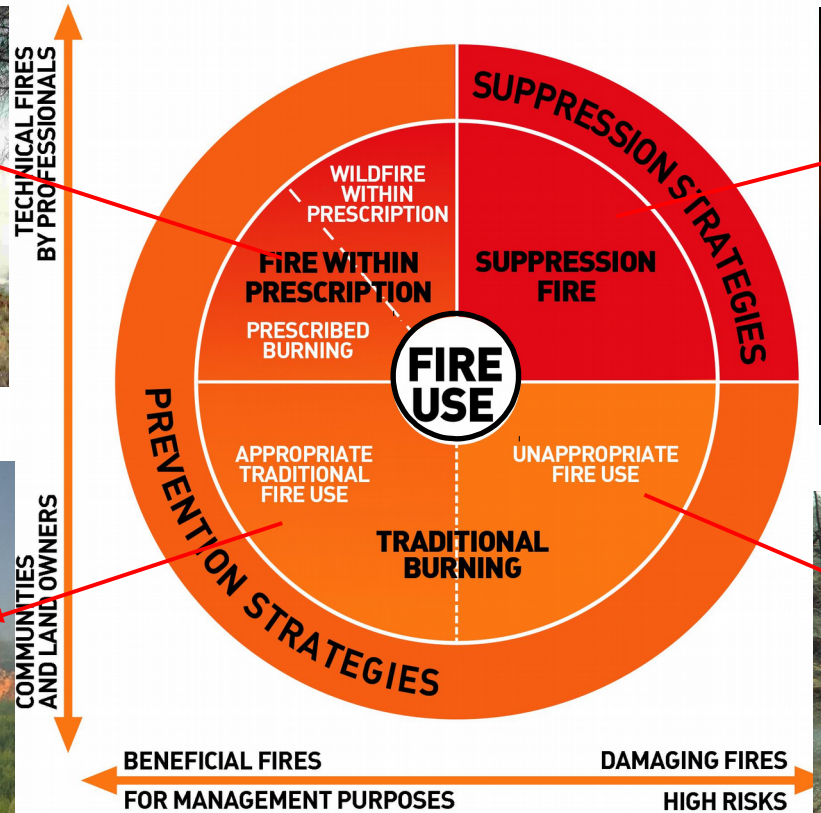
Damaging



Beneficial



Integrated Fire Management Definition



Rooms for improvement for each appropriate fire use

Prescribed burning (PB)

❖ Recent scientific inputs (selection)

- ICoPFires 2017, Barcelona
- Fernandes et al. (submitted). Characterizing the PB practice across southern Europe. *STOTEN*
- Fernandes et al. 2013. PB in southern Europe: developing fire management in a dynamic landscape, *FEE 11(s1): e1-e14*
- Ascoli & Bovio 2013. PB in Italy: issues, advances and challenges. *IFOREST 6*, 434-79
- Montiel & Kraus (ed.) (2010). *EFI Research Report 24*
-

❖ Main messages

- Strong policy-related, cultural, institutional and practical barriers to PB ... especially regarding forest
- A substantial increase in PB effort is unlikely as long as fire management policies are unbalanced and suppression-centred
- Not enough researches, too few experiments



Figure 2. PB area distribution (%) by French region (2001-2015). Larger figures respect to regions, smaller (italic) figures respect to departments that contributed with a minimum of 0.5% to total area treated and could be individualized.

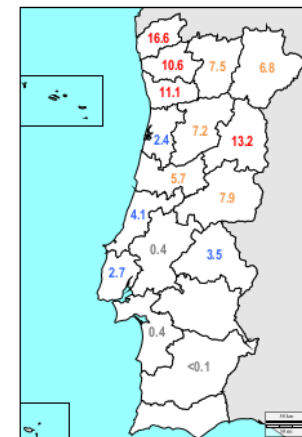


Figure 3. PB area distribution (%) in Portugal (2006-2015).

Rooms for improvement for each appropriate fire use

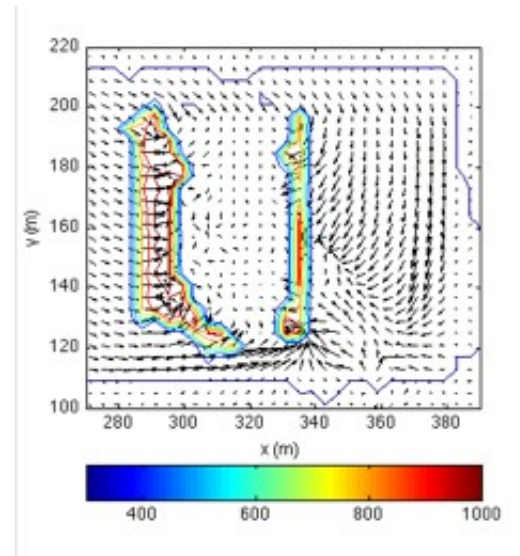
Suppression fire (SF)

❖ Recent scientific inputs

- Dupuy, Vega et al. 2011. Exploring three-dimensional coupled fire–atmosphere interactions downwind of wind-driven surface fires and their influence on backfires using the HIGRAD-FIRETEC model. IJWF 20, 734–750.
- Very few or none recent academic contributions
- Montiel & Kraus (ed.) 2010. EFI Research Report 24
-

❖ Main messages

- SF development save conventional resources (still not decisive)
- Needs for joint R&D advances between scientific and operational



Rooms for improvement for each appropriate fire use

Traditional burning

❖ Recent scientific inputs

- Fernandes et al 2013. PB in southern Europe: developing fire management in a dynamic landscape, *FEE* 11(s1):e1-e14
- See also Ribet, Métailié, ...

❖ Main messages

- The use of fire was present for a long time in the European culture
- Under legal and good practices, traditional fire can contribute to overall fuel management.
- Need for social sciences inputs to integrate conventional and traditional knowledges



Complementarity between traditional pastoral burning and PB in the French Pyrenees



Danish postcard showing a fire set in Randbøl Hede – today Randbøl Hede Nature Reserve – in the early 20 th Century. Source: GFMC archive.

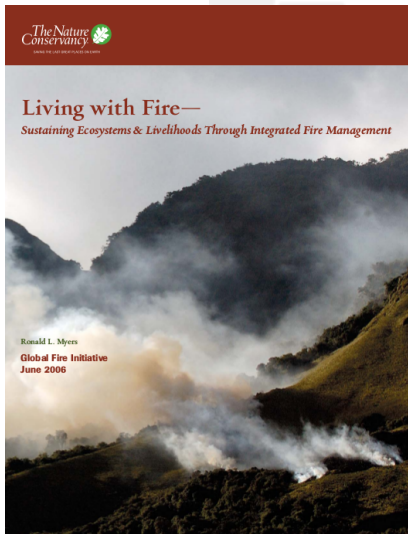
Métailié 1981. Le feu pastoral dans les Pyrénées centrales, Paris, Ed. CNRS.



Traditional burning techniques in coastal heathlands of Norway (photo by P.E.Kaland) In Montiel & Kraus (2010)

Integrated Fire Management

Europe might take advantages previous experiences from other continents



Myers (2006) Living with fire.
The Nature Conservancy



Yosemite NP, California, USA



- ❖ PB and SF management procedures in Europe seem poor in comparison with overseas practices carried out by relatively large organizations that manage fire on public land and on broader scales.
- ❖ **Main messages**
 - Europe should promote international exchanges at all levels (academic, operational, stakeholders)
 - Need for specific communication towards the general public to restore a culture of risk in Europe
 - Need for fire management plans at forest or regional scale :
 - Research needs for re-establishing ecologically appropriate fire regimes, taking advantage of appropriate fire uses
 - Taking into account new advances in fire ecology: fire dependent vs. sensitive ecosystems

Integrated Fire Management

Link the 4 steps of emergency crisis management

❖ Scientific inputs

- Rigolot & Alexandrian 2006. Learning from fuel-break behaviour during the 2003 larges fires in south eastern France. FEM 234
- Moreira 2013. Post-Fire Management and Restoration of Southern European Forests. Springer.



Link between fuel management and fire suppression



❖ Main messages

- Improved link/continuity between fire prevention and fire suppression
 - Better integration of prevention and suppression missions in forest fire agencies
 - Re equilibrate ressource allocation between fire prevention and suppression
- Use post fire recovery and restoration phases to better prepare prevention phases
 - Towards vegetation adaptation to climate change and to new fire regimes
- Generalize and formalize feedbacks and lessons learnt analysis

Towards further integration through a multi sectors approach

❖ Forestry policies

- Toward a multi risk approach in the forest domain:
 - fire, insects, drought, wind storms, ...
- Strengthen forest sector and promote bio-economy and nature based solutions

❖ Urban policies

- Limitation of urban sprawling
- Make fire management plans binding for urban and other land planning documents
- Adapt rules regarding building materials

❖ Energy policies

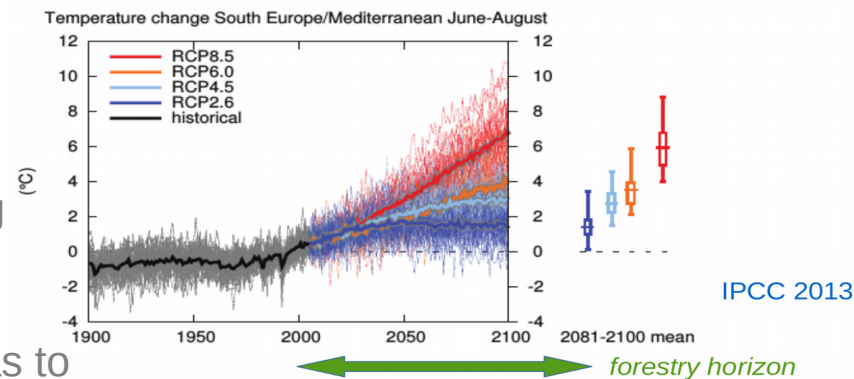
- Well regulated wood energy programs may have positive feed back on the fire issue



Global change context calls for an adaptive management framework

- ❖ Climate change : not just a change of state but a state of change
 - multiple uncertainties : global scenarios & local impacts ; extreme events ; complex interactions ; impact of adaptive measures
 - For each decision, identify short-term and long-term benefits and risks
 - anticipate and manage possible trade-offs between short- vs long-term

- ❖ Towards an adaptive management framework
 - Current decisions should be based on existing knowledge developed from the initial situation analysis.
 - Monitoring of the effects of those actions so as to inform future management decisions including incorporation of new knowledge
 - Lessons learned analysis for continuous improvements in fire management
 - Towards a Fire Lessons Learnt Center for Europe



Thank you for your attention

