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net risk work

Networking for the European Forest Risk Facility initiative

Challenges / constrains integrating wildfire risk into spatial planning in Catalonia

Cagliari (Sardinia, Italy), 10-13th April 2018

Eduard Plana, Marta Serra, Marc Font







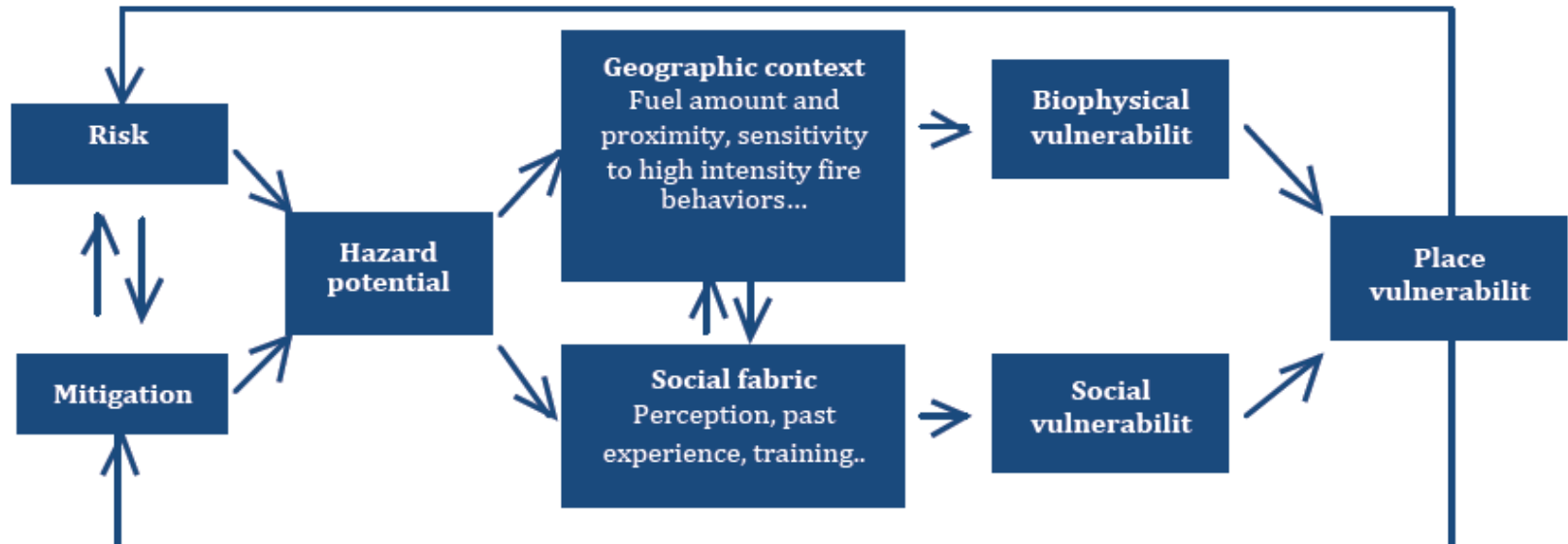


Figure 1. Hazards of place model of vulnerability. Source: Adapted from CUTTER, 1996.

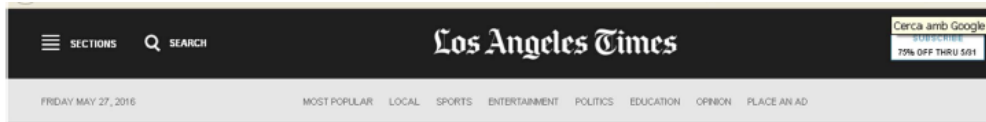


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Op-Ed Why we need to learn to live with fire instead of fighting it



The charred remains of a property near Clearlake, Calif., are seen on Aug. 6. Federal, state, and county fire agencies currently spend almost \$5 billion a year fighting fires. (Jeff Chiu / Associated Press)

By Kyle Dickman

AUGUST 8, 2015, 5:00 AM

10 February 2014, 5:54am GMT

Total flood defence is a myth: we must learn to live with the water



Sometimes the choice is to flood towns or country. Sometimes it's both. (Jim Brumby)

Op-Ed



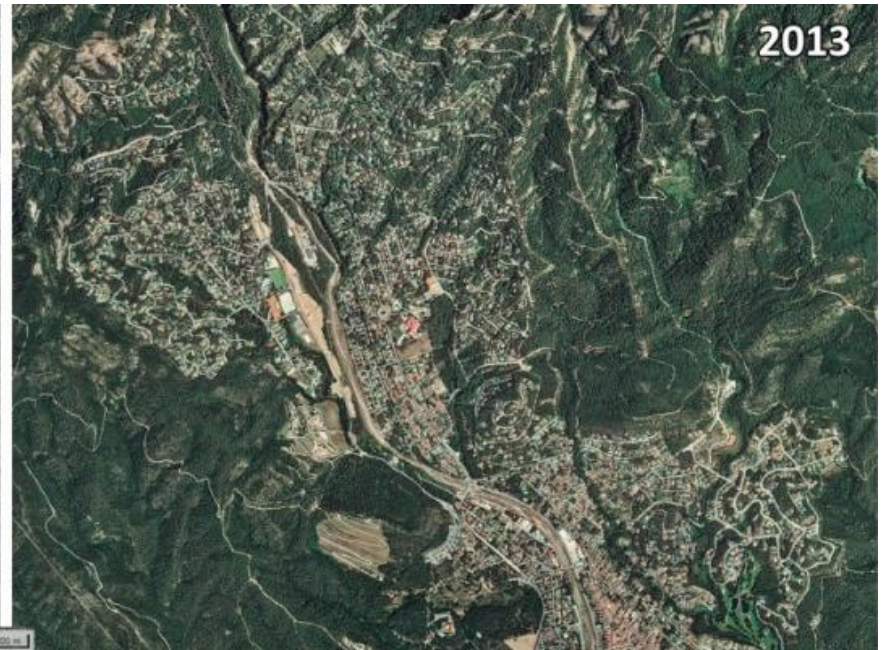
The primal fear of brush fires

The solution is to stop extinguishing every glowing spark, and to start treating wildfires like floods: predictable and sometimes uncontrollable events that homeowners and towns can plan around. Thinning forests outside communities, lighting more prescribed burns to eliminate the most volatile grasses and brush, and being more selective about which fires we fight would help restore forests, protect towns

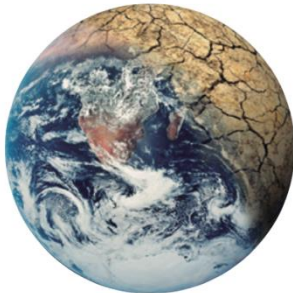
continues. Breaking it will require more than Cantwell's worthy bill; it will require politicians and firefighters to do the unthinkable: let unprepared houses burn. The other option is to keep doing what we're doing until there's a fiery equivalent of Hurricane Katrina.



Why integrate wildfire into spatial planning?



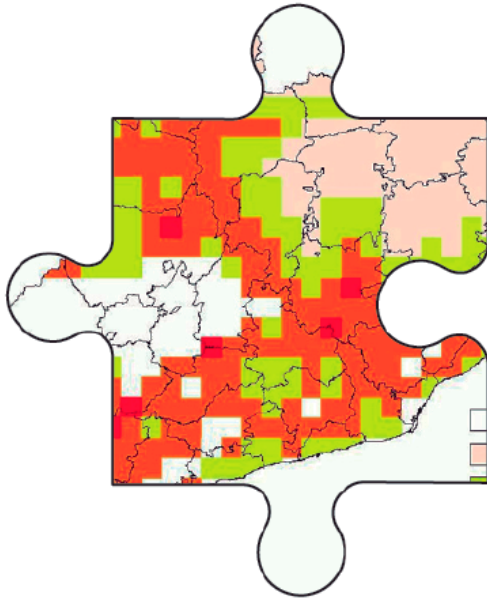
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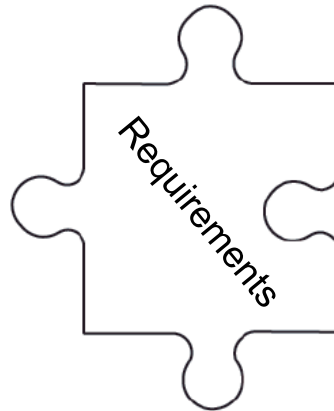
- Urban sprawl
- More forest, less agricultura
- Drought weather



Wondering...



Fire Risk
assessment
outcomes



Urban and
spatial
planning



The same **needs**?

✓ There're good risk analysis information
but...

Needs of prevention
and extinction

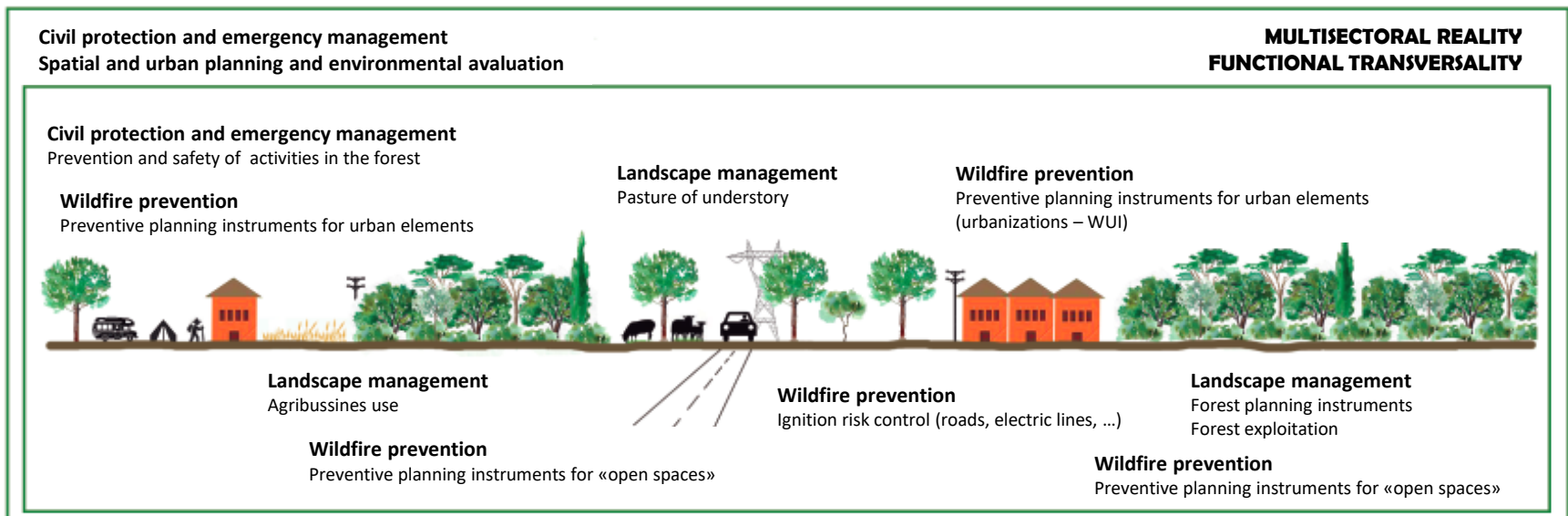
?

Urban
needs



The risk and its **complexity**

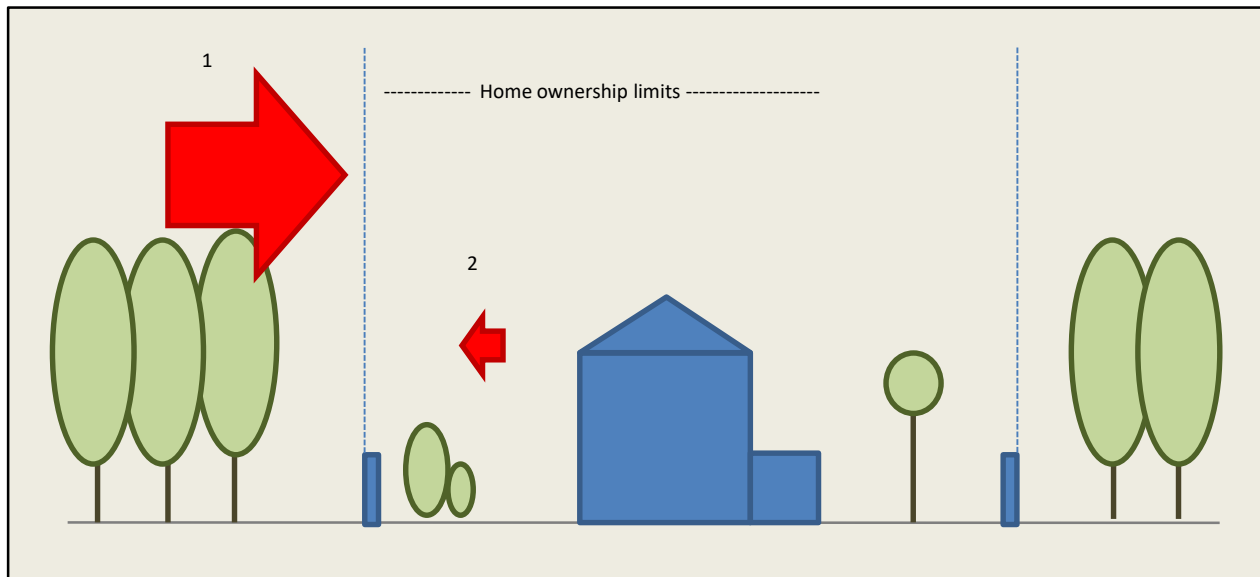
$$\text{Risk} = (\text{Hazard} \cdot \text{Vulnerability}) - \text{Response capacity}$$





The risk and its **complexity**

Risk “ownership” & responsibility





The risk and its complexity

DO YOU KNOW YOUR ROLE?
Learn what you can do to help your community become fire adapted.

Visit FireAdapted.org 

CIVIC LEADERS

- Require defensible space around structures
- Don't allow development in high risk areas
- Follow safety codes to regulate building materials & locations

DEVELOPERS AND BUSINESS OWNERS

- Don't build in high risk areas
- Make sure developments have adequate defensible space
- Use non-combustible building materials

FIRST RESPONDERS

- Use the Ready, Set, Go! program
- Educate your jurisdiction about fire adapted communities
- Create a fire plan with other emergency responders

LAND MANAGERS

- Treat hazardous fuels to reduce risk from wildfire
- Identify & assess wildfire risk on the land you manage
- Work collaboratively to reduce risk on the land you manage

HOMEOWNERS

- Become a Firewise Community
- Create 100 feet of defensible space
- Keep roof & gutters clean



Nearly 70,000 communities are at risk from wildfires and billions are spent each year to fight them.
Reduce your risk by creating and implementing a Community Wildfire Protection Plan.

FOR 71

Landscaping in Florida with Fire in Mind



Martha Monroe and Alan Long
School of Forest Resources and Conservation



The risk and its complexity





What **can do** urban and spatial planning?

Manage the territory through its
classification and **qualification**

The regime

Urban land

Urbanized land

No urban land

The uses

Industrial

Green areas

Residential, etc.



In other words...

... Decide where each thing goes

Compatibility of land uses and regime with natural risks
and their prevention



Natural risks and the **urban law**

Spatial planning

3 levels of protection

- 🌳 Special
- 🌳 **Territorial**
- 🌳 Preventive

Urban law

2 specific articles

- 🌳 Guidelines for urban planning
 - 🌳 **Preservation** against natural risks
 - 🌳 **Sectoral legislation** / flood risk
- 🌳 Preservation guidelines against natural and technological risks
 - 🌳 Adequate **levels of protection** against natural and technological risks
 - 🌳 Official **geographic information** of Cartographic and Geologic Institute of Catalonia



Example of base information for planning



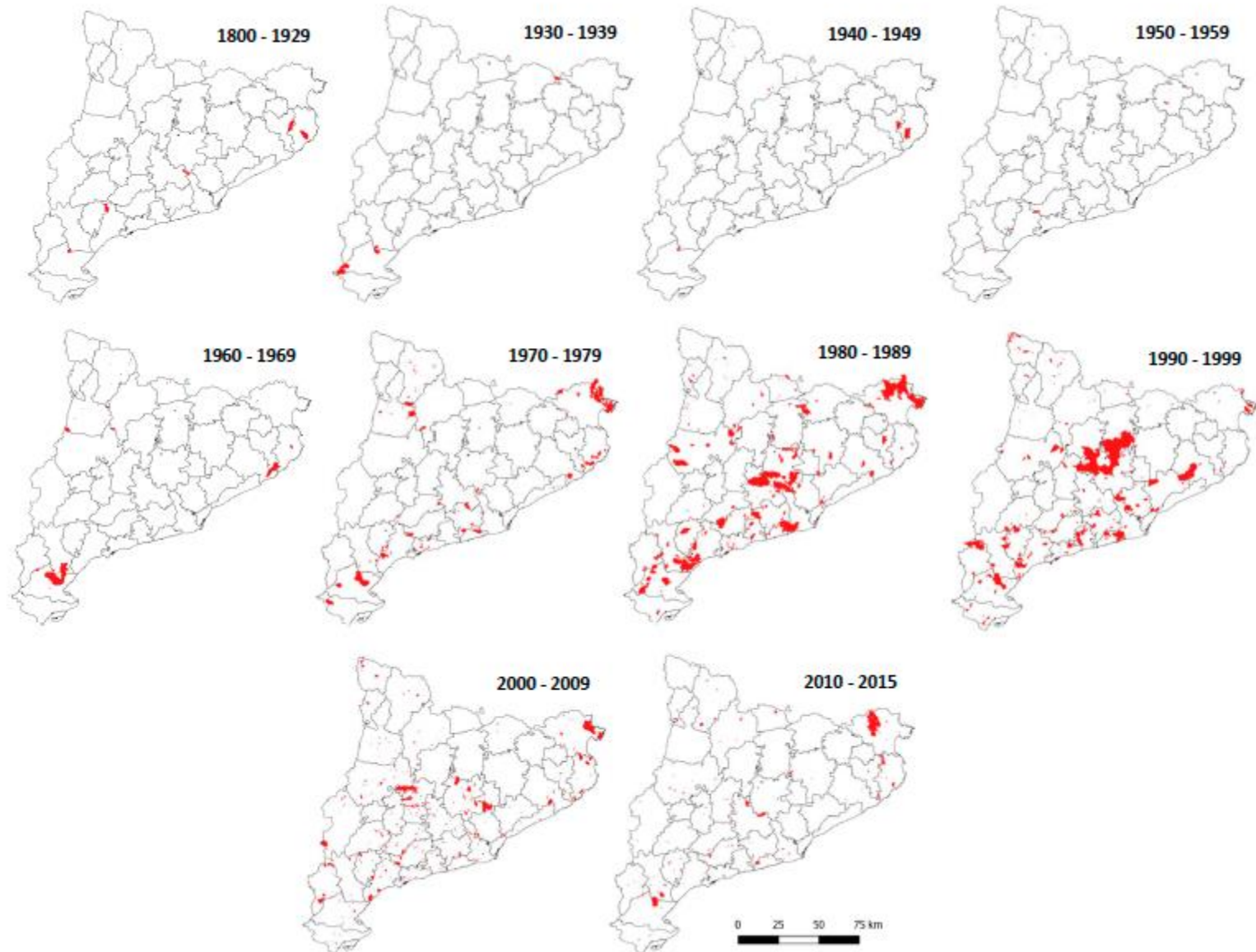


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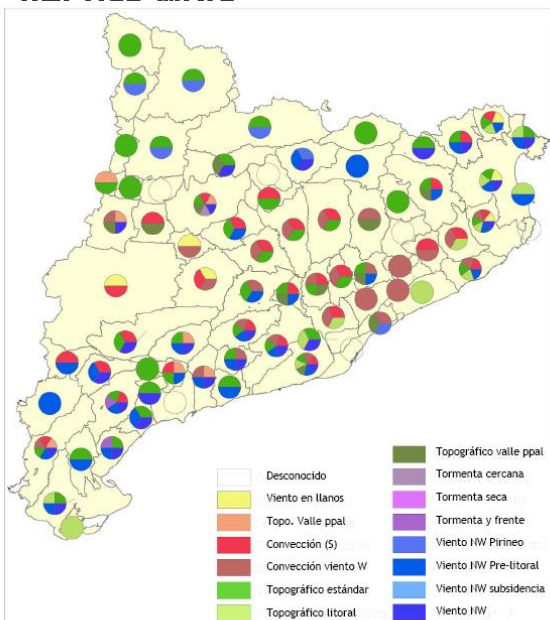


Figura 2: Imagen de las Zonas homogéneas de régimen de incendio forestal con los incendios estudiados superpuestos.

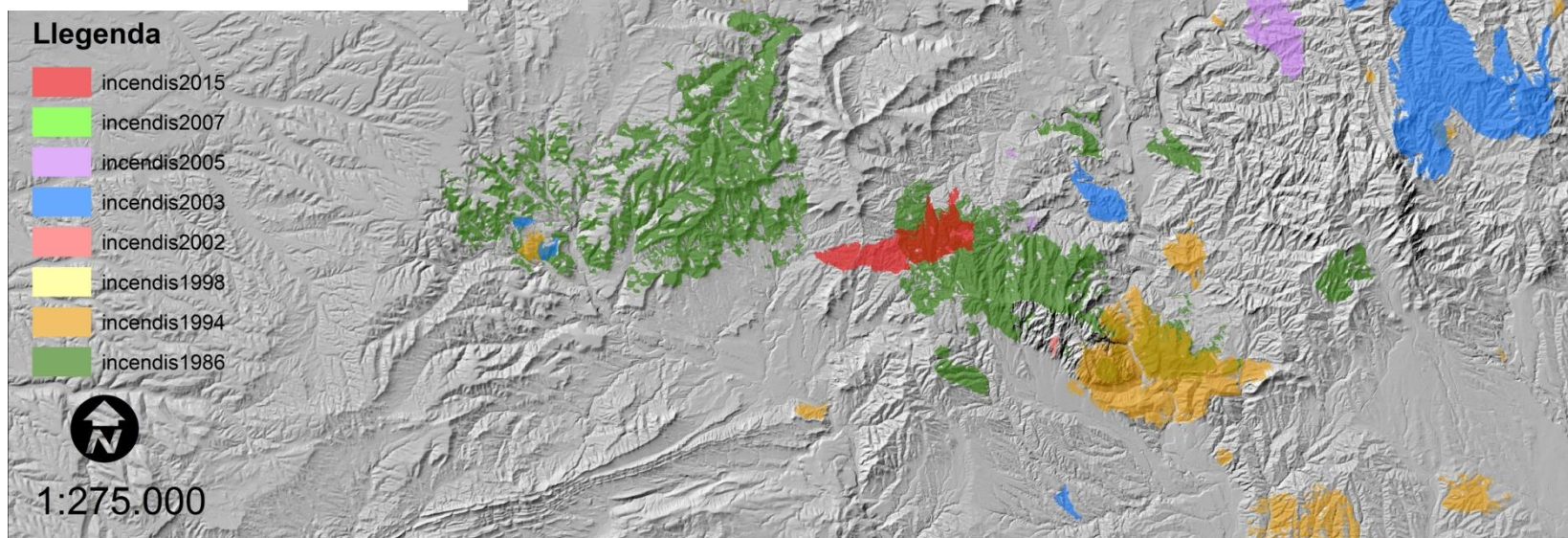


FIGURA 5. INFLUÈNCIA DELS FACTORS TOPOGRÀFICS EN LA PROPAGACIÓ DE LES FLAMES

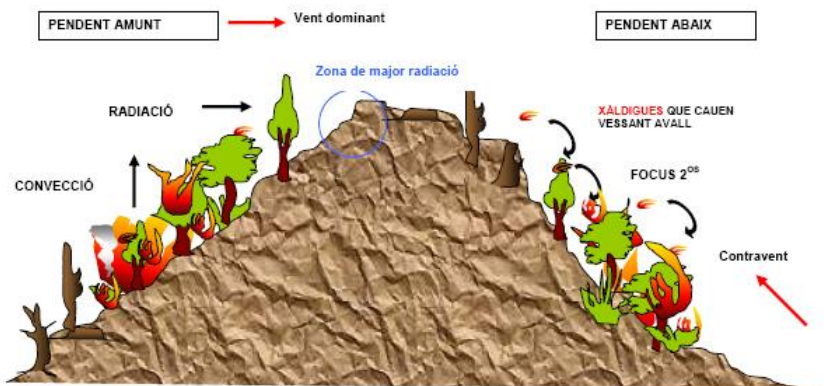


FIGURA 7: REPRESENTACIÓ DE L'ALINEACIÓ DE FORCES 3/3 I 1/3

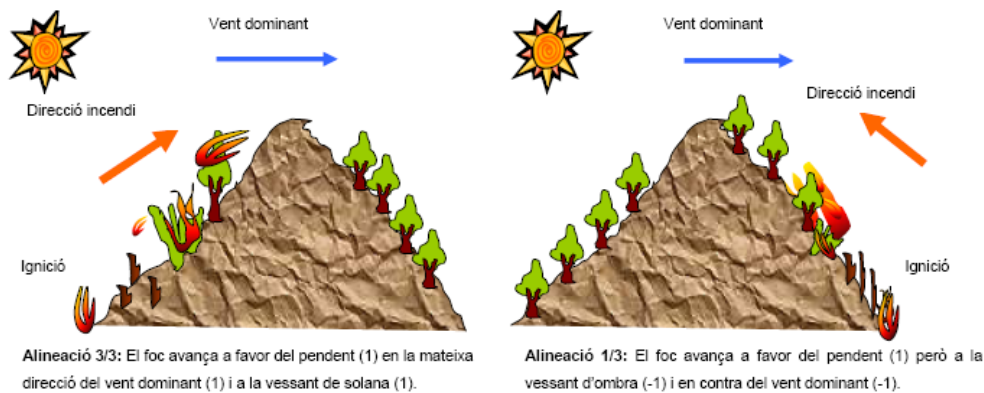
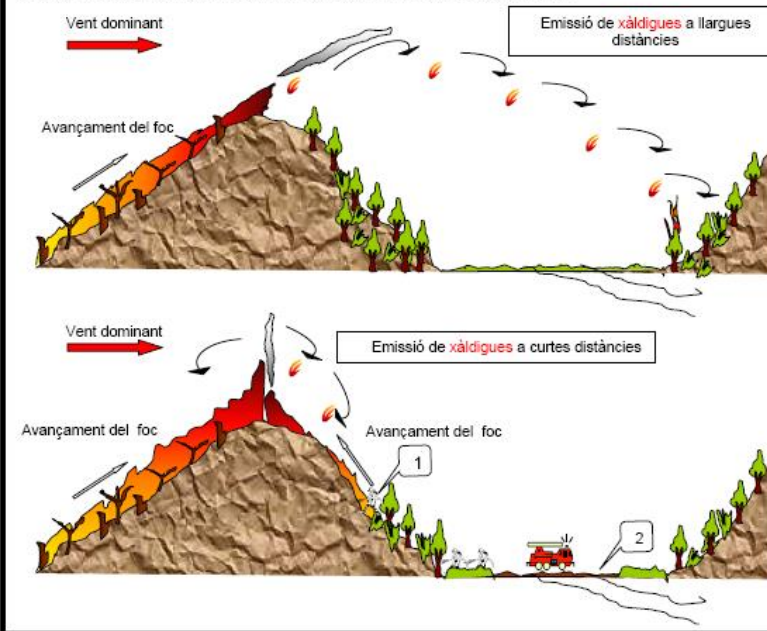


FIGURA 11: SITUACIONS D'ÚS DEL FOC TÈCNIC EN L'EXTINCIÓ D'INCENDIS



Incendio Òdena, 2015. 1700ha

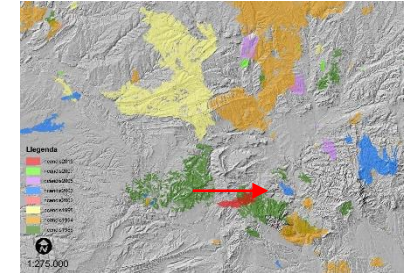
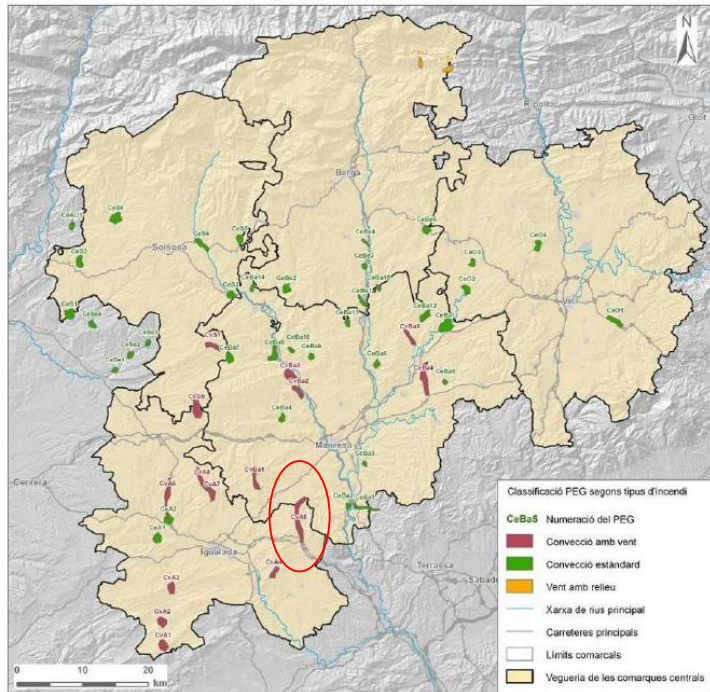


Figura 69: Punts estratègics de gestió (PEG's) delimitats a les comarques Centrals





Results; the hazard



Opportunities

- Preventive measures weighted at risk level

- Infrastructures as elements of pre-extinction

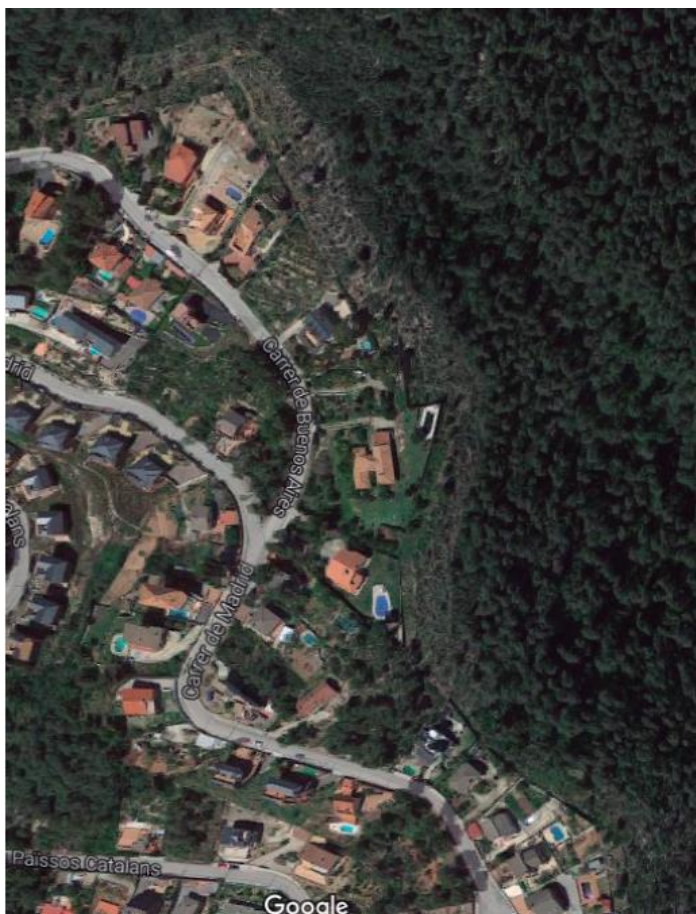
Requirements

- Cartography of reference
- Technical prescriptions

- Adapted
- Inclusion planning process
- Cartography and prescriptions typifiable cases



Results; the vulnerability



Opportunities

- Interaction between open spaces and infrastructures systems

- Functionality of open spaces from cost-effectiveness

Requirements

- Cartography of reference
- Technical prescriptions

- Cartography of reference
- Technical prescriptions



Results; the response capacity



Opportunities

- Infrastructures as a pre-extinction elements

Requirements

- Adapted
- Cartography and prescriptions typifiable cases



Conclusions

Settlements

Open
spaces

Infras-
tructures

Hazard

Vulnera-
bility

Response

Planning system

Cartography of
reference

Normative and
Technical
prescriptions

Directly
participation
experts wildfire

Legal
framework

Cost-
effective
analysis



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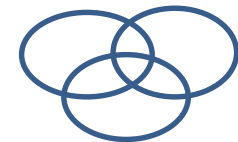
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Conclusions

“For an effective integration of forest risk into spatial/urban planning, it is necessary to adapt the risk assessment information to the **requirements of land planners**”

- ✓ “**include the expertise** on forest risks in the initial stages of the planning phases”
- ✓ “**quality** of risk assessment information, a **strong legal framework**”
- ✓ “having measures and tools for putting the **needs of risk management** before private (even other public departments) interests”
- ✓ “strong institutional coordination for being able to assume the **transverse dimension** of factors affecting the phases of the risk cycle and its domains” ; *several risks’ interactions*
- ✓ “participatory processes (..) for promoting the corresponding **awareness** and (..) **own risk mitigation responsibility** (..) **Uncertainties**”



Spheres of
knowledge



Thanks for your attention

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