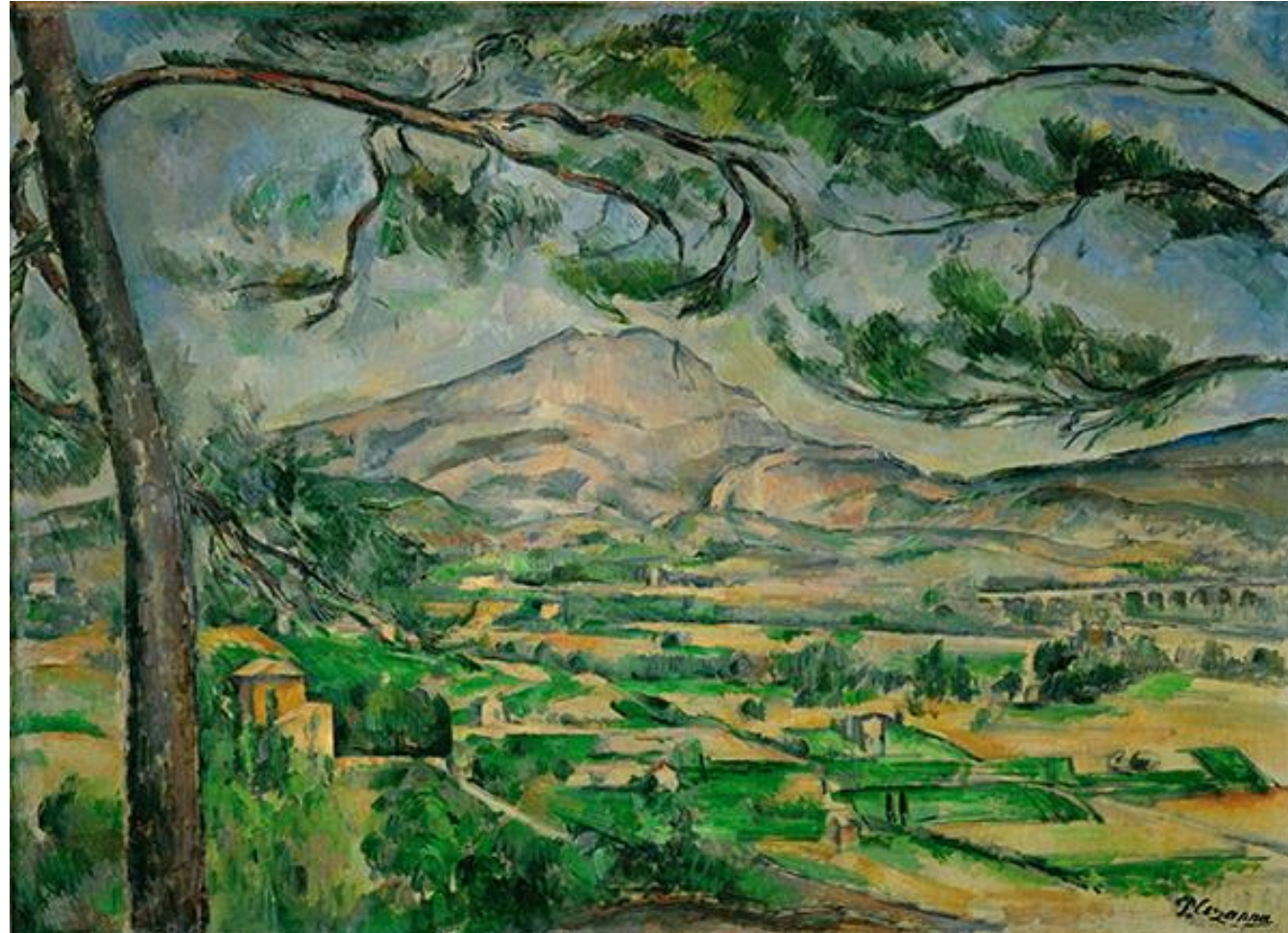


French regulations on forest fire risk prevention, including fuel treatment and planning provisions



Online Le Fur
online.le-fur@inrae.fr




16/09/2020

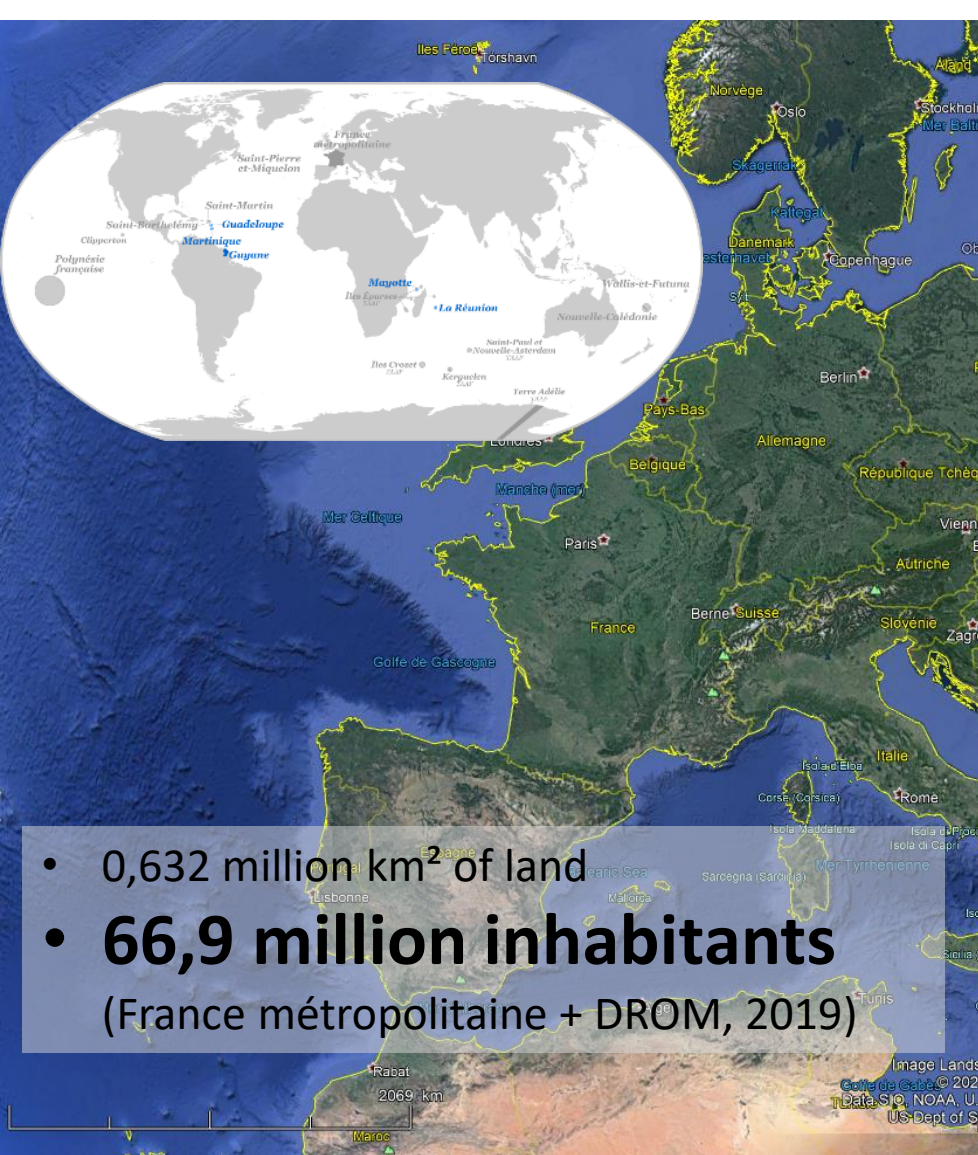
FRANCE AND AUSTRALIA

Bushfire Science Workshop

Tuesday 15 – Thursday 17 September 2020

Summary

1.  Context
2. Forest Fire Preventive Policy at WUI → National Legislative Framework
3. Three Focus:
 - Clearing vegetation surrounding buildings and roads
 - Forest Fire Risk Prevention Plan
 - State Bushfire requirements into Planning Scheme



Context

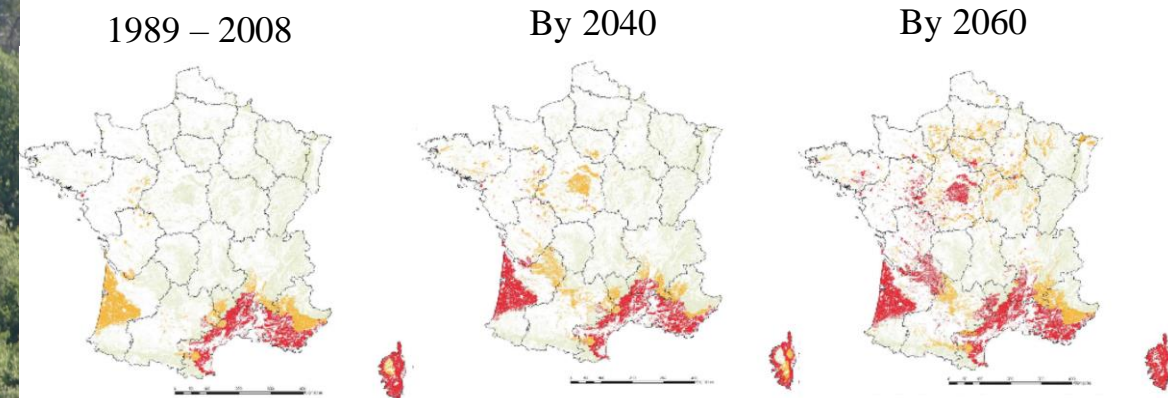
Context



Forward perspectives with Global Changes :

- More fires ... Larger ... Stronger
- More Forest Fire Prone Areas

Large forest fire (> 100 ha) sensitivity to weather danger conditions



Chatry, C., Le Gallou, J.Y., Le Quentrec, M., Lafitte, J.J., Laurens, D., Creuchet, Grelu, J., 2010. *Rapport de la mission interministérielle, Changement climatique et extension des zones sensibles aux feux de forêts.*

Context



Picture from a presentation by Antonis Mantzavelas at Centre d'Expertise Scientifique (CES), Aix-en-Provence. Seminary on 7th December 2018



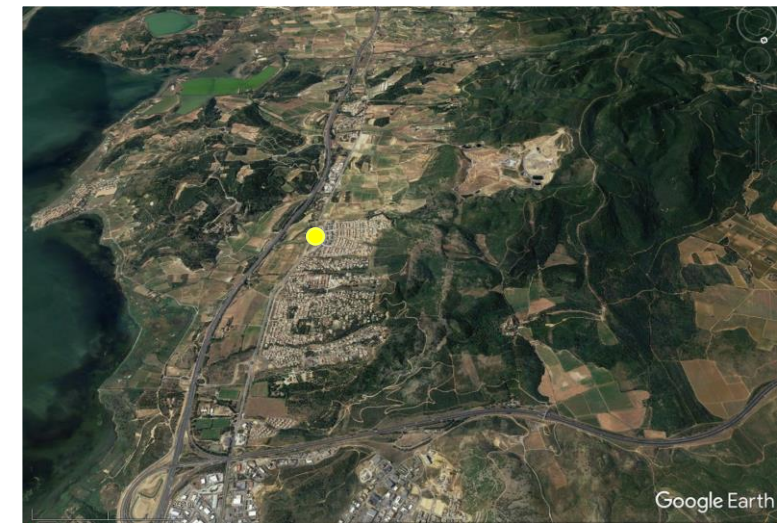
Picture from a presentation by Fantina Tedim at Centre d'Expertise Scientifique (CES), Aix-en-Provence. Seminary on 7th December 2018

=> The largest area currently burned by wildfires in the European Mediterranean zone coincides with the most densely populated areas



Mediterranean style houses

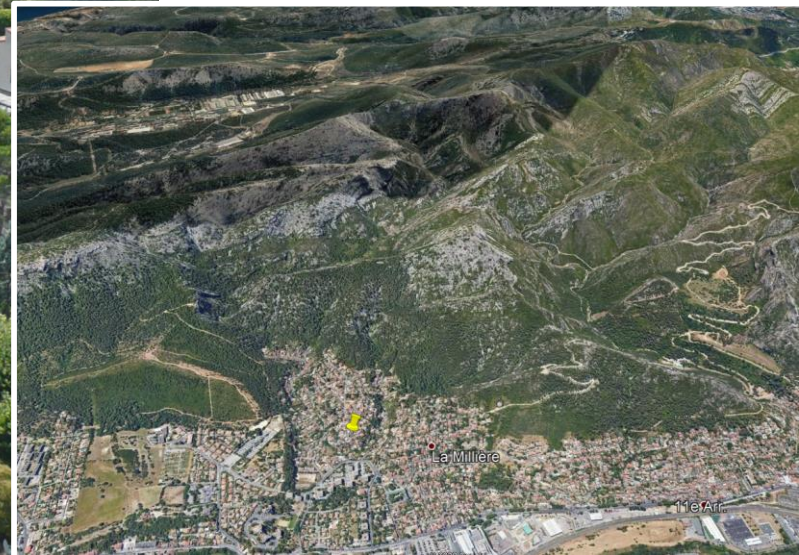
Southern Europe has historically been made of fire-resistant building materials

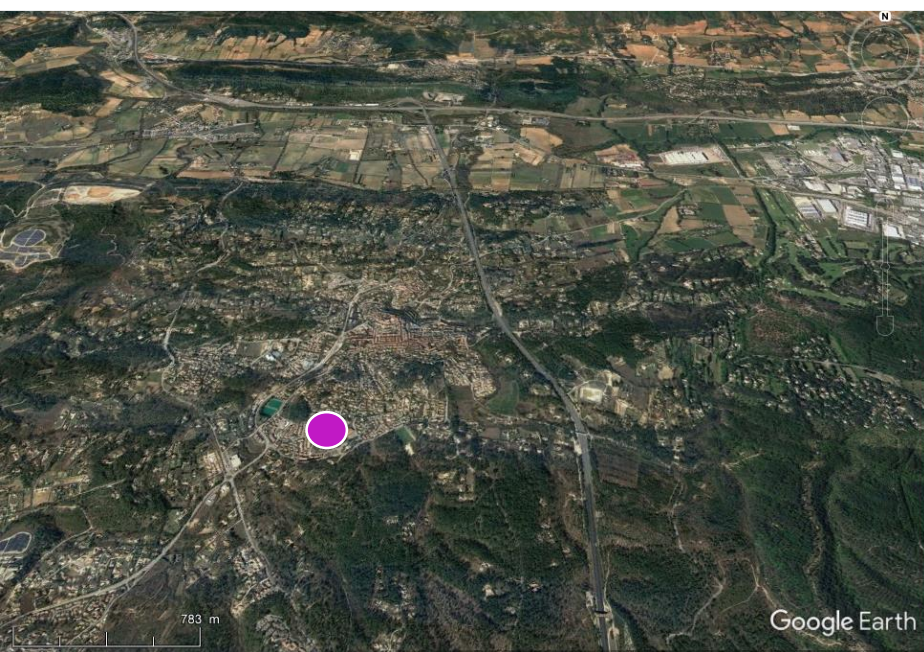




The continuous urban sprawl interfacing wildlands

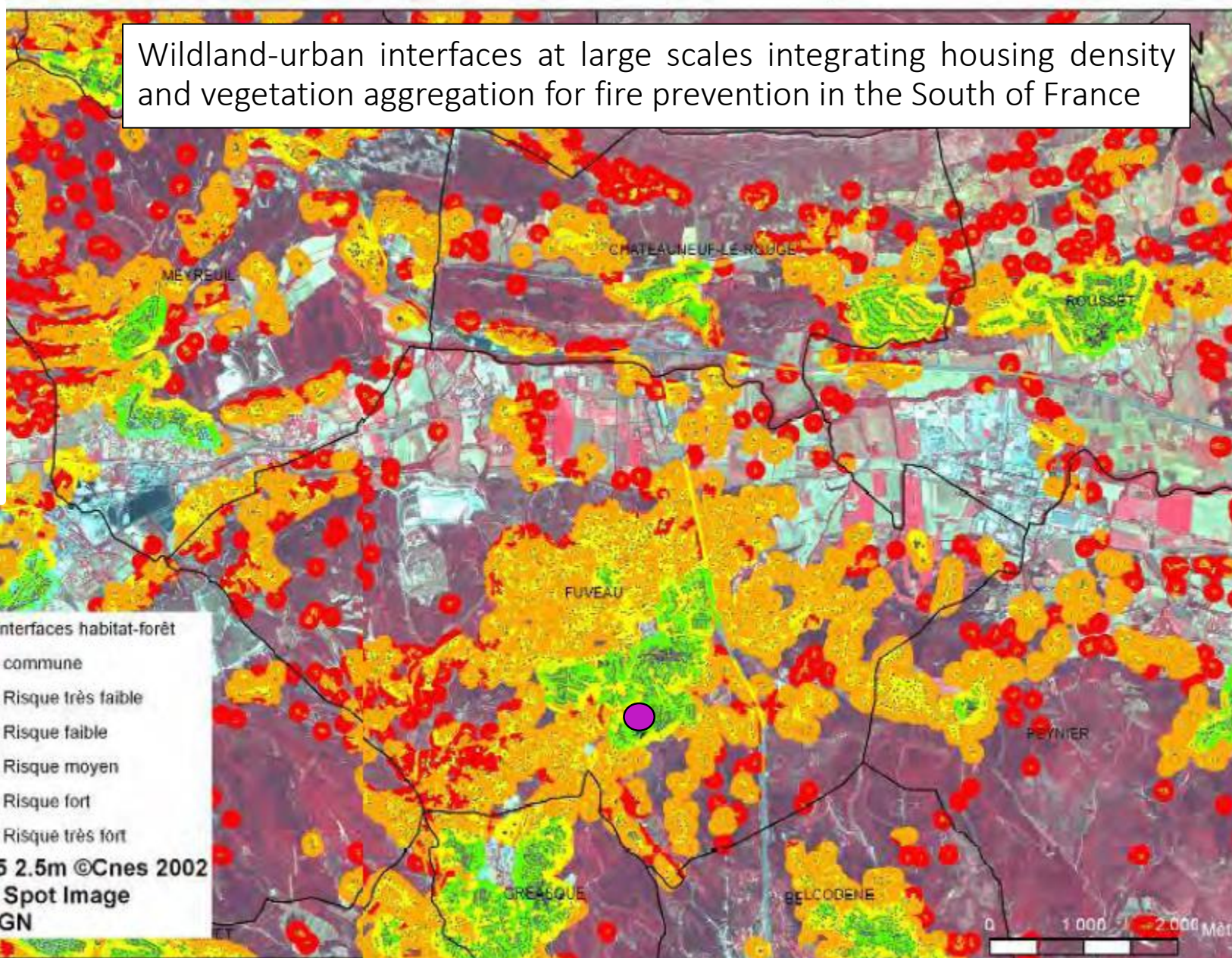
A.S. Soubié, September 2008.
11^e arr. Marseille, France





Village of Fuveau, France

Wildland-urban interfaces at large scales integrating housing density and vegetation aggregation for fire prevention in the South of France



A way to characterize the forest fire risk in wildland-urban interface :

Context



Lampin-Maillet, C., Jappiot, M., Long, M., Bouillon, C., Morge, D., & Ferrier, J.-P. (2010). Mapping wildland-urban interfaces at large scales integrating housing density and vegetation aggregation for fire prevention in the South of France. *Journal of Environmental Management*, 91(3), 732–741. <https://doi.org/10.1016/j.jenvman.2009.10.001>

Context

Fire propagation at WUI ?

- Flammability of Ornamental Species (including leaf and litter bed scales)
- Vegetation Distribution at the WUI

INRAE

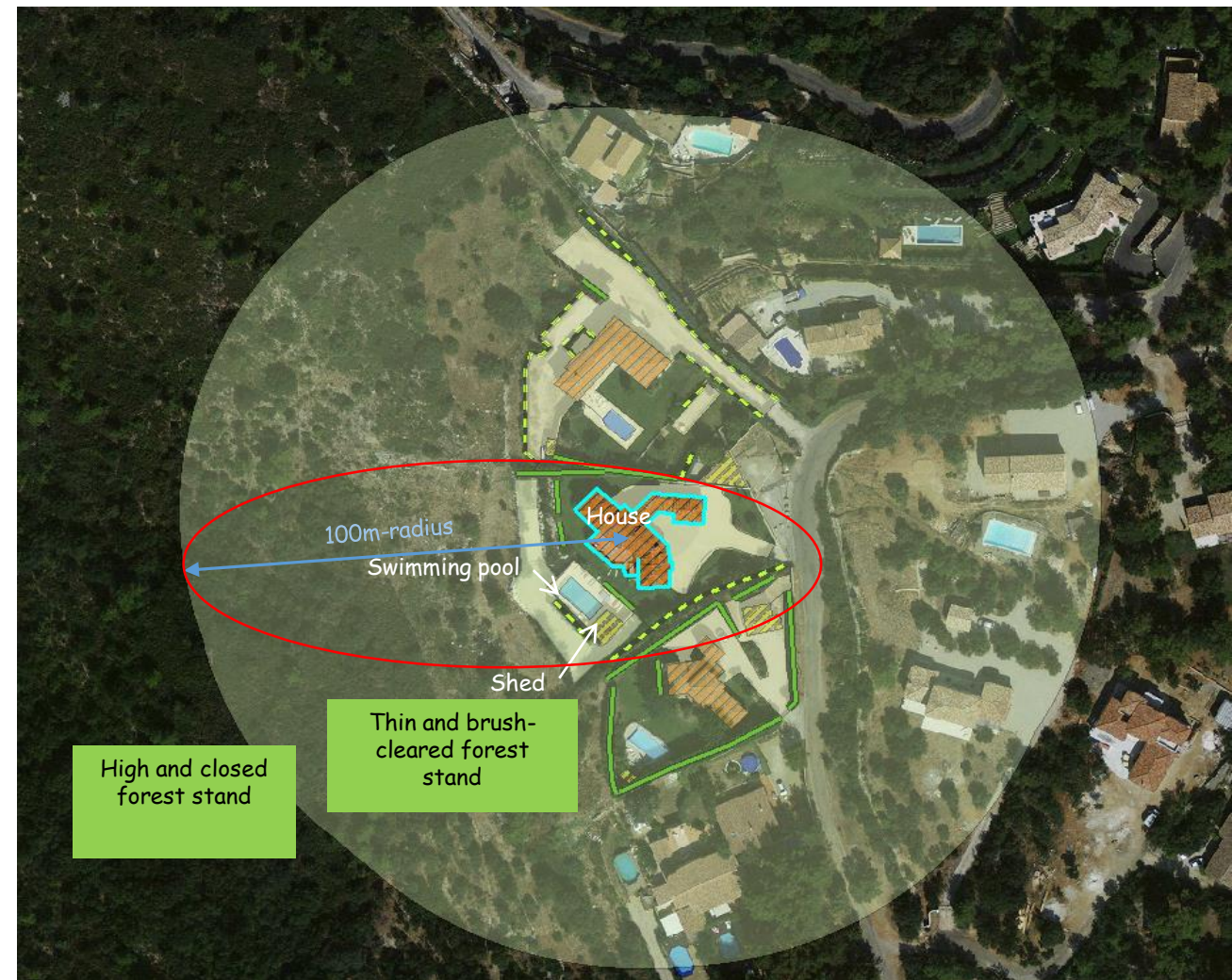


Illustration from Marielle Jappiot presentation, INRAE at #WildfireConf_2017. 6 to 7 April 2017, Valabre, France

Ganteaume, A., Jappiot, M., Lampin, C., Guijarro, M., & Hernando, C. (2013). Flammability of Some Ornamental Species in Wildland-Urban Interfaces in Southeastern France: Laboratory Assessment at Particle Level. *Environmental Management*, 52(2), 467–480. <https://doi.org/10.1007/s00267-013-0067-z>



Forest Fire Preventive Policy

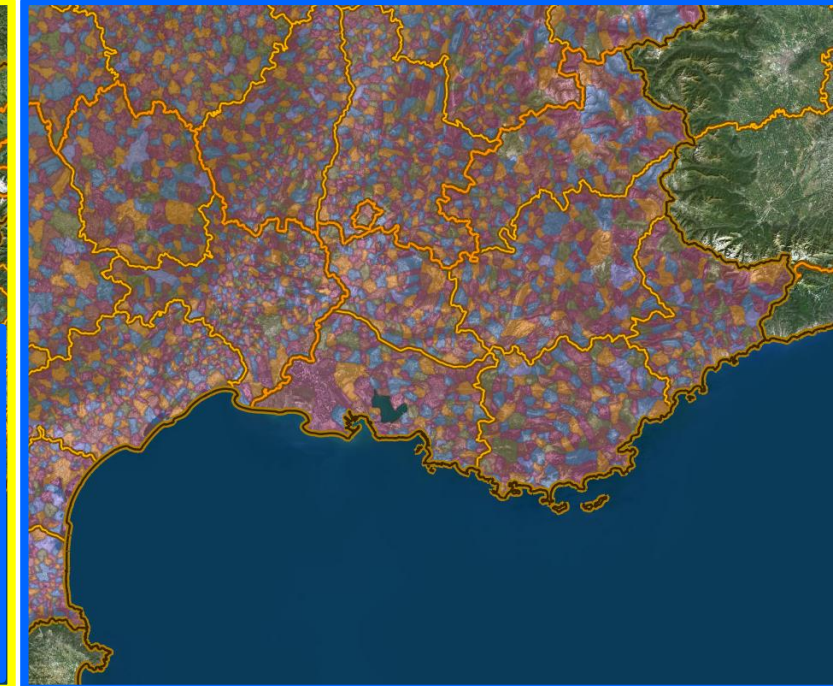
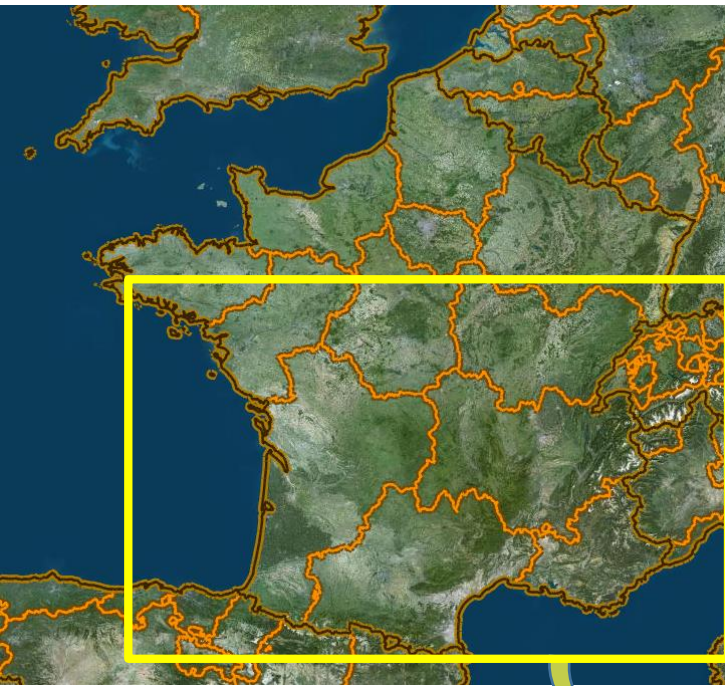
→ National Legislative Framework

The administrative subdivisions (metropolitan France)

14 Regions

95 « *Departements* »

34 967 Municipalities
= « *Communes* »



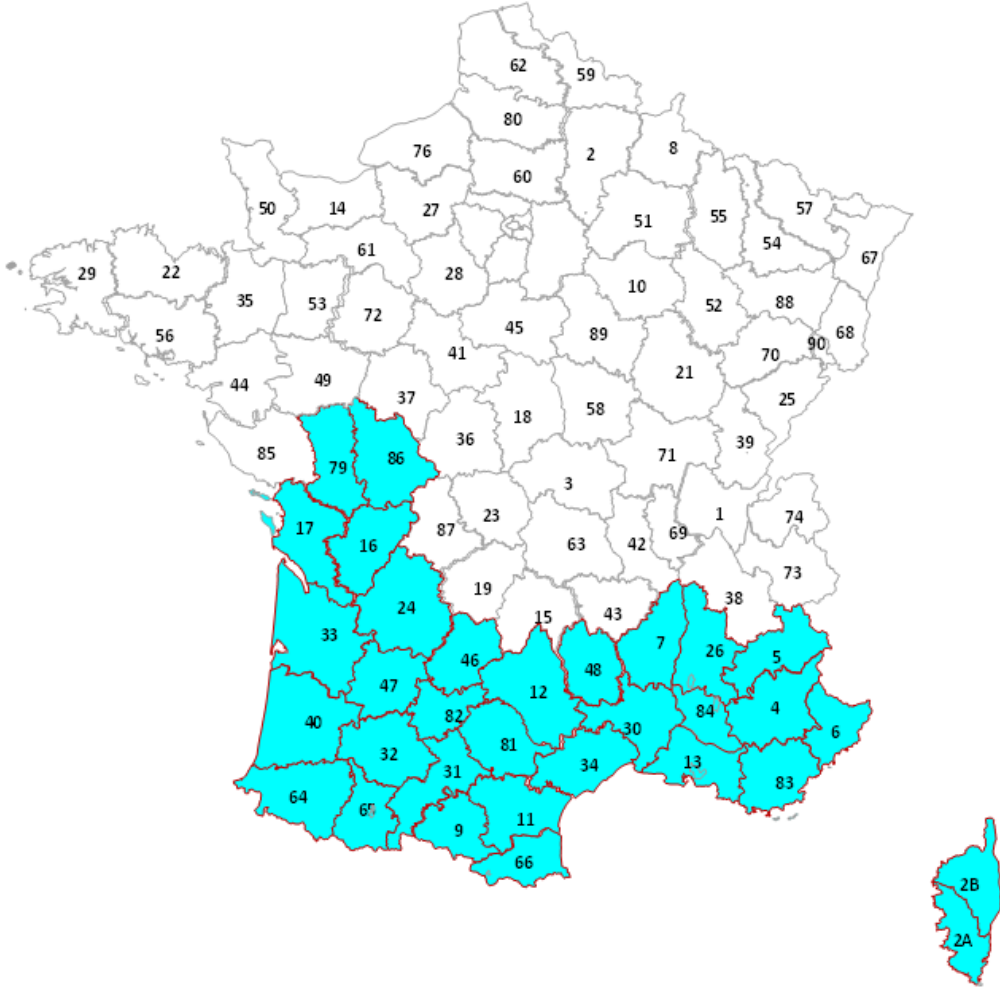
State agencies (Environnement, Agriculture, etc.)
- Préfecture
+
Local authorities

Main Decision-making Scale
State agencies (Environnement, Agriculture, etc.)
- Préfecture
+
Local authorities

Local authorities

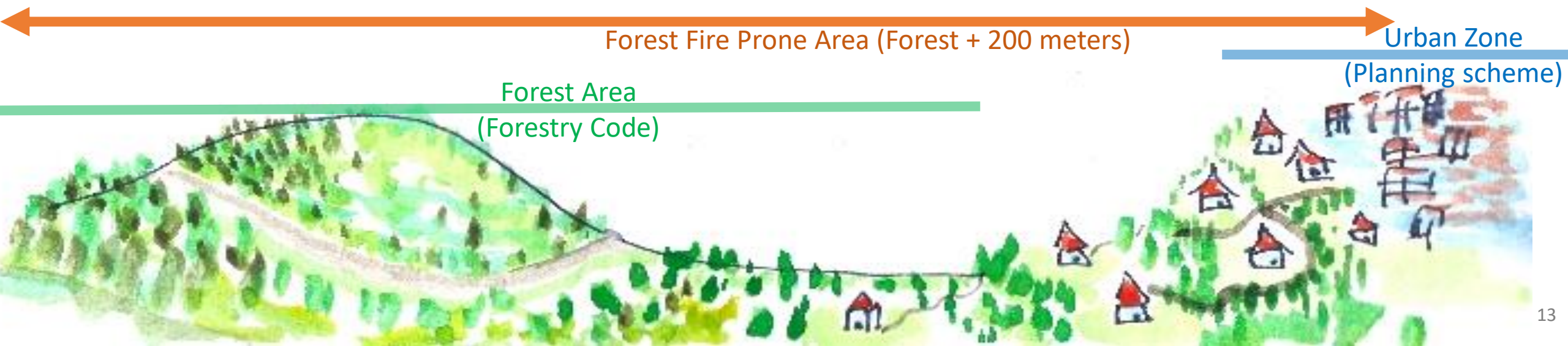
Forest fire policy in the french metropolitan areas

Article L133-1, Forestry Code:
32 departments have forests that are particularly exposed to fire risk



■ Départements soumis au risque incendie de forêt selon l'article L 133-1 du code forestier

The Wildland-Urban Interface (WUI)



Forest Fire Preventive Policy (Practices and Regulations)

Design and maintenance water supply and access networks in the forest

Fire filters and breaks (fuel treatment)

Prescribed burning

Fire surveillance and fast detection in summer

Forest access regulation in summer

Clearing vegetation surrounding buildings and networks

Permanent fire use controle

⇒ Under the authority of the Prefect

Planning provisions

Prevention Plans and State directives

- to restrict urban development
- to reduce susceptibility of settlements to forest fire loss

Ministry in charge of the Environment

Forest Fire Prone Area (Forest + 200 meters)

Urban Zone (Planning scheme)

Forest Area (Forestry Code)



Forest Fire Preventive Policy (Practices and Regulations)

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Permanent fire use controle

⇒ Under the authority of the Prefect (scale of the Département)

Planning provisions
Prevention Plans and State directives
- to restrict urban development
- to reduce susceptibility of settlements to forest fire loss

2.

1.

Forest Fire Prone Area (Forest + 200 meters)

Urban Zone (Planning scheme)

Forest Area (Forestry Code)



1. Clearing vegetation surrounding structures

Why this measure ?

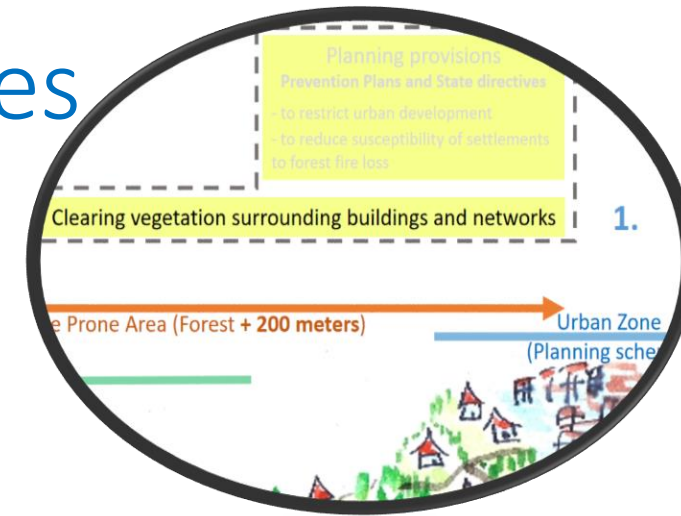
- Fuels reduction treatments
- Vertically and horizontally discontinuous vegetation



- To reduce wildfire intensity
- To avoid setting off a fire



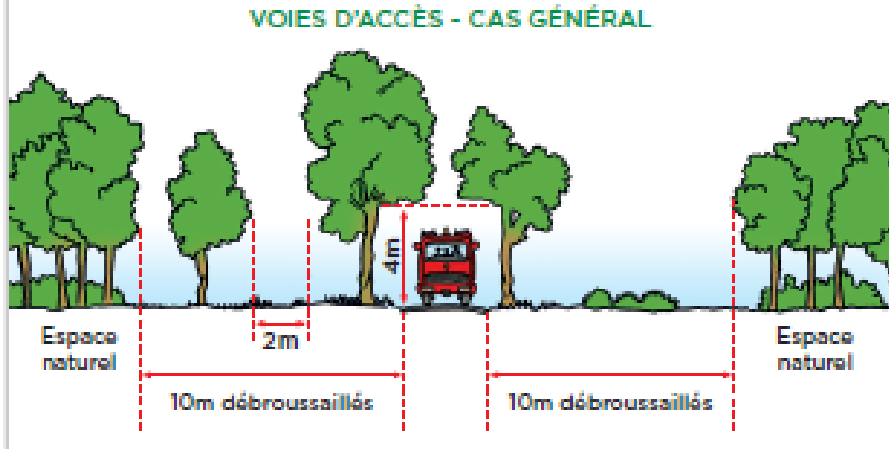
- To reduce the likelihood of building destruction during wildfires
- To reduce human accidental forest fires



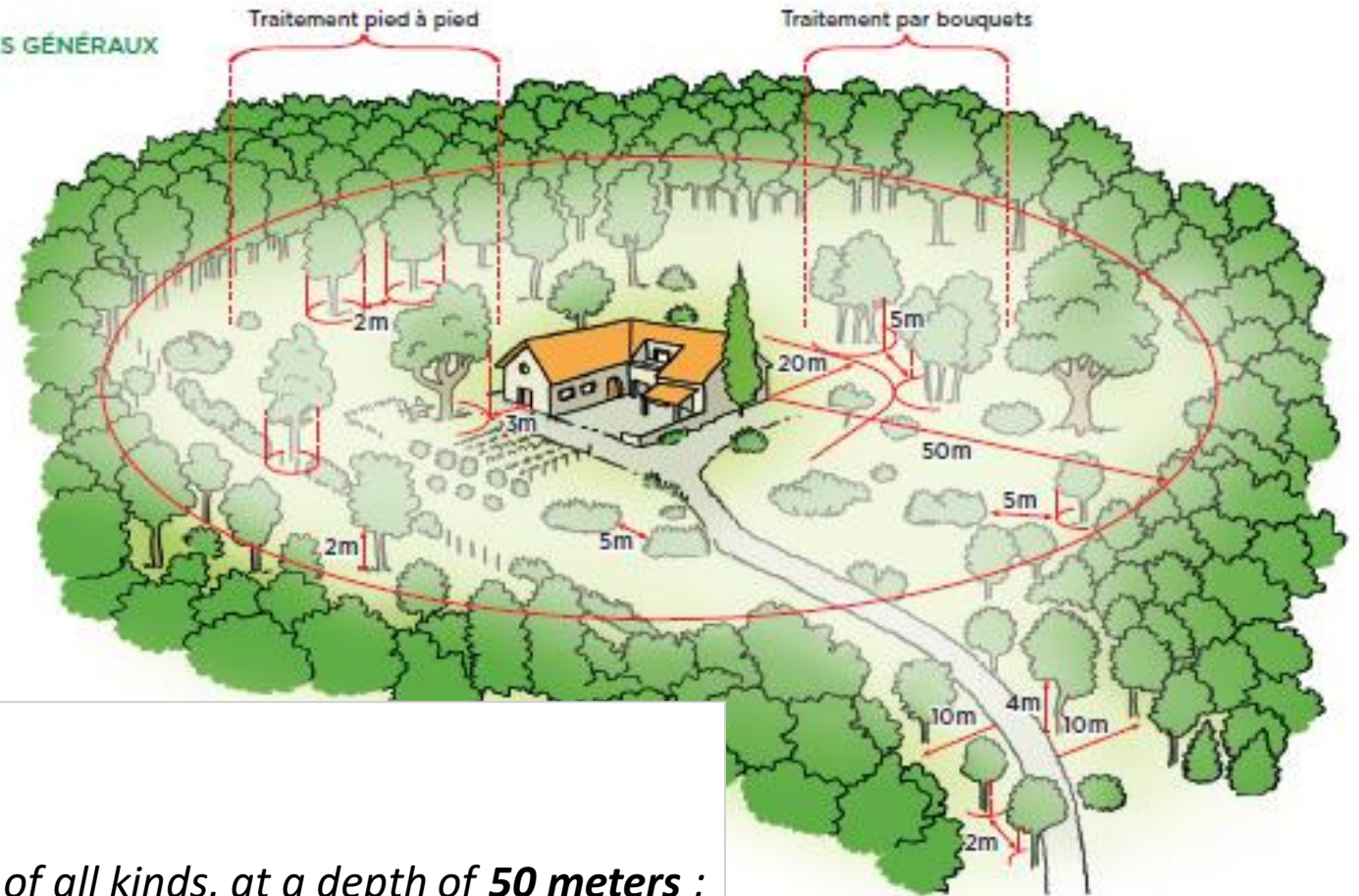
- Created by law:
Loi d'orientation forestière, 9th July 2001
- Regulation to be complied with by landowners (forest + 200 m)
[Art. L. 134-6 / L. 134-8, Forestry Code](#)
- The mayor ensures the safety of his constituents = power of police
[Art. L. 2212-1, General Code of Local Authorities](#)

Clearing vegetation regulations also exist for public roads, rail and electricity networks
→ Under Prefect authority (power of police).

1. Clearing vegetation surrounding structures



PRINCIPES GÉNÉRAUX

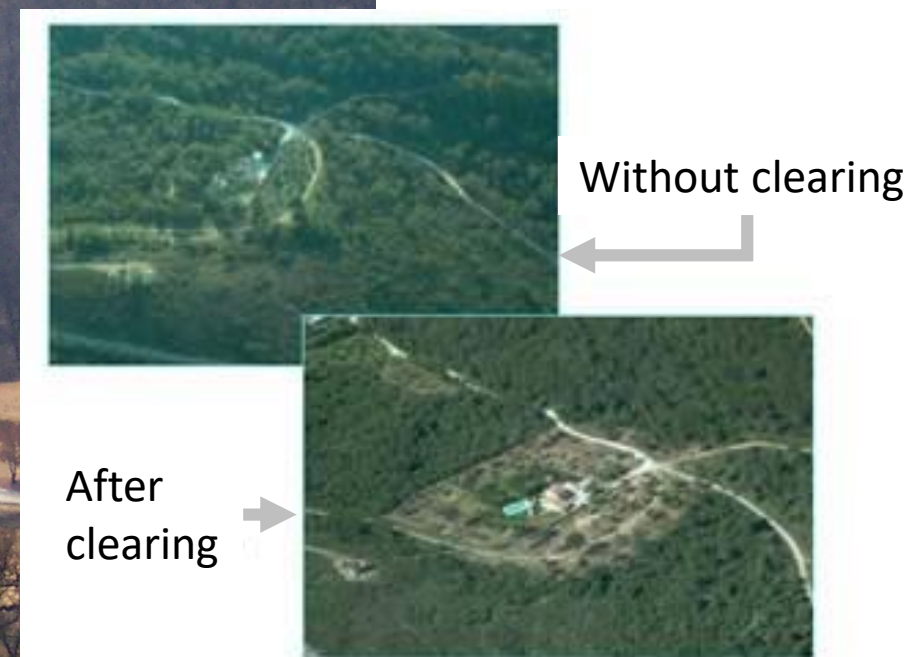


Article L.134-6, Forestry Code:

The clearing of vegetation must be carry out :

- *around buildings, construction sites and installations of all kinds, at a depth of **50 meters** ;*
- *around private roads giving access to these constructions, building sites and installations of all kinds, to a depth of **10 meters** on either side ;*
- ***on all land located in urban areas** defined by an urban planning document (planning scheme = “plan local d’urbanisme”).*

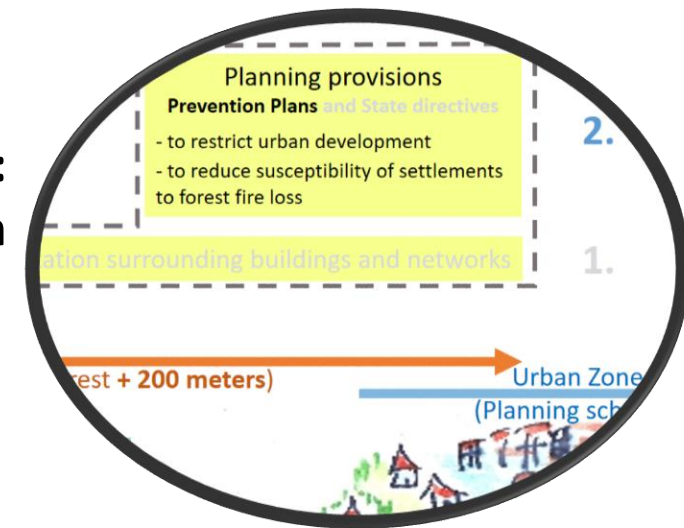
The Prefect of the department specifies the characteristics of the clearing (depth, height, etc.).



2. Fire Risk Planning System

Planning Tool 1 : Forest Fire Risk Prevention Plan

- Municipality scale
- Implemented by the State (Prefect of the department)
- Different stakeholders are involved in the implementation
- Forest fire risk study
- Legal precedence over local urban planning schemes
- Created by law: Loi relative au renforcement de la protection de l'environnement (loi « Barnier »), 2nd February 1995 (L. 562-1 à L. 562-6, **Environnement Code**)

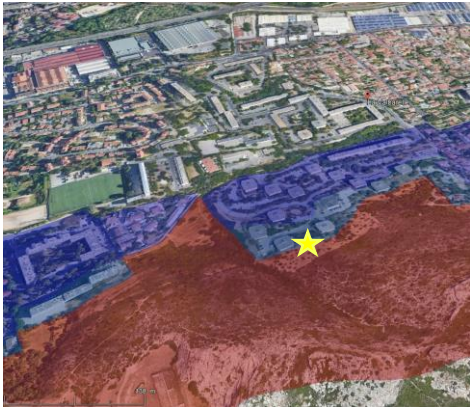


As a public easement affects land use, PPRIF directly impacts urbanization through its rules and regulations which is divided into two parts: Restrictions on new constructions and prescriptions on existing ones.

Forest Fire Risk Prevention Plan in the city of Marseille

Red Zone = General unconstructibility

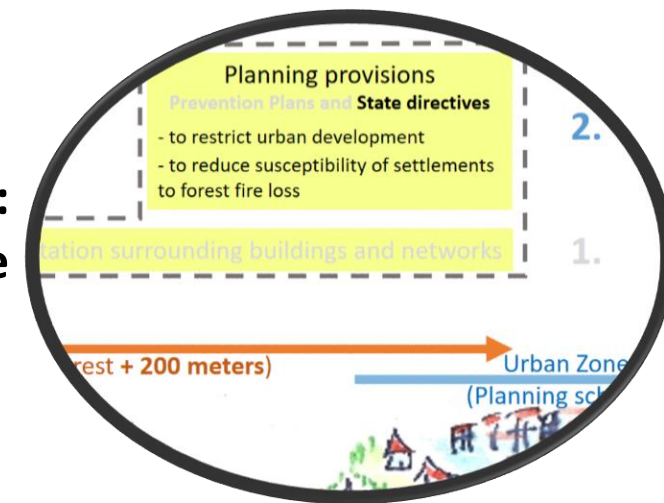
Blue Zone = Conditional constructability (authorized with prescriptions to reduce settlement vulnerability)



DDTM13, 2018

2. Fire Risk Planning System

Planning Tool 2 : State Bushfire requirements into Planning Scheme



Planning Scheme (= “*Plan Local d’Urbanisme*”) for every municipality (ALUR Law) :

Decisions are made primarily at the planning level under **broad frameworks established at the policy level.**

Provision of information states at the scale of the “département” (by the Prefect)

(art. L.132-2 ; R. 132-1, Planning Code)

→ **Forest fire hazard/ Fire history maps with proposals for forest fire prevention measures**

↓ **The mayor decides on the provisions to be applied**

Examples of forest fire **Planning Scheme measures**

in order to create a defendable space to reduce the risk of forest fire to life and property :

- Minimum distance between the dwelling and the public road
- Access designed to accommodate fire fighting vehicle intervention (minimum trafficable width, etc.)
- Water supply for fire fighting purposes

Planning Permit can be refused by the mayor if the building project is detrimental to public safety (R. 111-2, Planning Code)

=> Decision takes precedence over the Planning Scheme provisions.

Conclusion

- A well developed legal framework to prevent forest fire risk at the wildland-urban interface

→ Improve our capability

Planning provisions :

- Forest Fire Risk Prevention Plan
- Forest Fire Planning Scheme measures

Clearing vegetation
surrounding structures

FEUX DE FORÊT

Les prévenir et s'en protéger

1 feu sur 2 est la conséquence d'une imprudence



- Ni feu ni barbecue** aux abords des forêts
- Pas de cigarette** en forêt ni de mégot jeté par la fenêtre de la voiture
- Pas de travaux sources d'étincelles** les jours de risque d'incendie
- Pas de combustible contre la maison** bois, fuel, butane...
- Témoin d'un début d'incendie, je donne l'alerte** en localisant le feu avec précision
- Je me confie dans ma maison** elle est mon meilleur abri

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Thank you for your attention

[Contact : ondine.le-fur@inrae.fr](mailto:ondine.le-fur@inrae.fr)