

Synergizing the actions: planning, protecting, mitigating.

The example of the “Landes de Gascogne” of Aquitaine

Pierre MACE, Jean-Marc BILLAC, Julia MORIN

Summary

The “Landes de Gascogne” forest is mainly a *Pinus pinaster* forest which stretches over an area of 1 250 000 hectares. It represents 34 000 employments and an annual turnover about 2.5 billions of euros.

It was classified as a high risk area for wildfires by the European Commission in 1992. Each year, over 1 800 wildfires break out and burn about 1 700 ha (1980- 2006). Aquitaine is one of the regions of France where there are the most frequent outbreaks of forest fires. However, in average, 0.92 ha burn per fire.

This result is possible thanks to an early involvement of forest owners. From 19 44 to 1958, 400 000 ha burnt and 82 persons died. Since this tragic event, they got organised at a local scale and created 241 DFCI Syndicate Associations dealing with 2 500 volunteers. Each year foresters pay 2.3 € per hectare to protect their forest. These associations enable them to maintain prevention infrastructures as forestry tracks (used to reach plots), a dyke system (essential to a correct hydraulic management), water points (in order to keep water as close as possible). These infrastructures enable rapid intervention so that forest fire brigades intervene at the start of fires.

This involvement with forest fire brigades is permanent on the field but also for the use of a decision-making aid tool for planning and protecting (mapping, forest fire weather index...).

Moreover, by thinning, pruning or clearing of the undergrowth, forest owners reduce loads of combustible material, and break horizontal and vertical continuity of vegetation. These operations prevent fires from propagating.

This human, technical and financial synergizing enables to safeguard population, forest owners investments and to protect resource for industries.

Introduction

Aquitaine covers more than 4 million hectares. Woodland represents 44 percent of its territory (1 780 000 ha). In particular, the “Landes de Gascogne” forest is mainly a cultivated *Pinus pinaster* forest which stretches over an area of 1 250 000 hectares. It represents 34 000 employments and an annual turnover about 2.5 billions of euros. As a consequence, protecting this forest is an economic stake but also an environmental and social one.

Aquitaine, a high risk area for wildfires

It was classified as a high risk area for wildfires by the European Commission in 1992.

Each year, over 1 800 wildfires break out and burn about 1 700 ha (1980-2006). Aquitaine is one of the regions of France where there are the most frequent outbreaks of forest fires. However, only 0.12 percent of the forested area burn each year and, in average, 0.92 ha burn per fire. The department of Gironde, with 1040 forest fires per year, is the first French department before the Haute Corse.

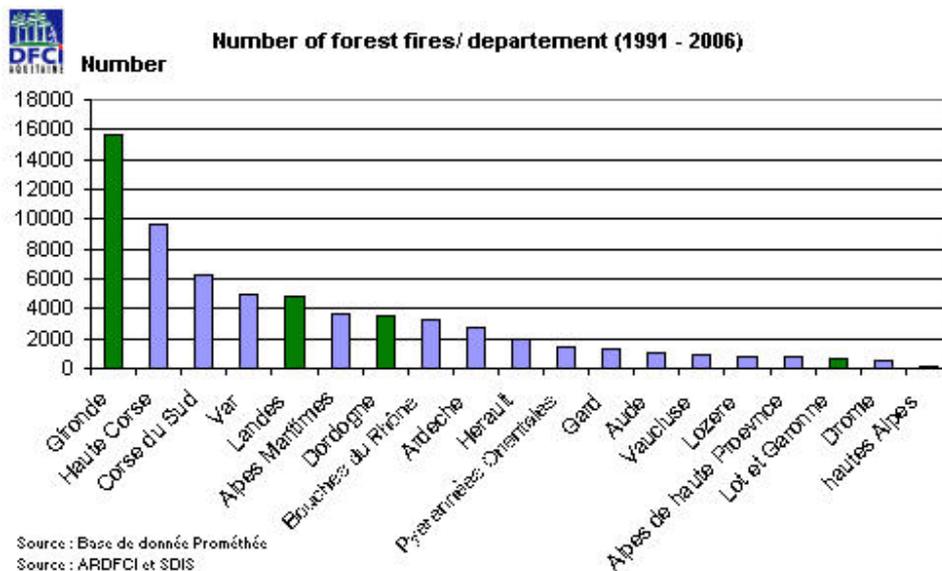


Table 1—Number of forest fires per department from 1991 to 2006.

Sesión 2— Synergizing the actions: planning, protecting, mitigating.
The example of the “Landes de Gascogne” of Aquitaine —
Macé, Billac, Morin

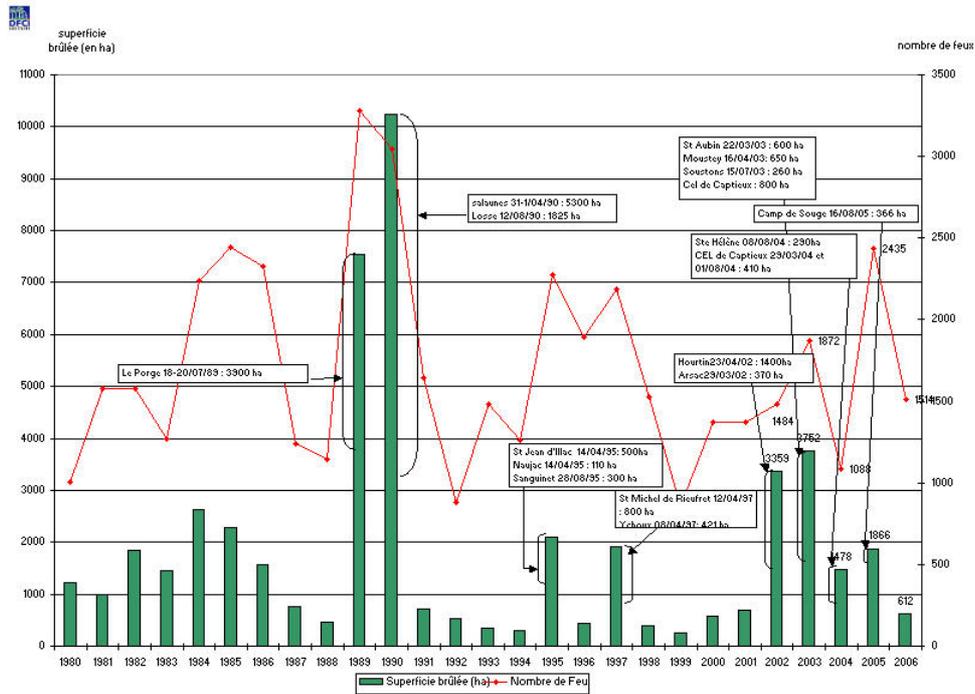


Table 2—Number of forest fires and burnt areas from 1980 to 2006.

These results are possible thanks to the synergy of prevention, fighting and forecasting actions.

The participants involved are:

- State services
- Local authorities
- Fighting services
- Forest owners
- Development and prevention organisms
- Police force

Sesión 2— Synergizing the actions: planning, protecting, mitigating.
The example of the “Landes de Gascogne” of Aquitaine —
Macé, Billac, Morin

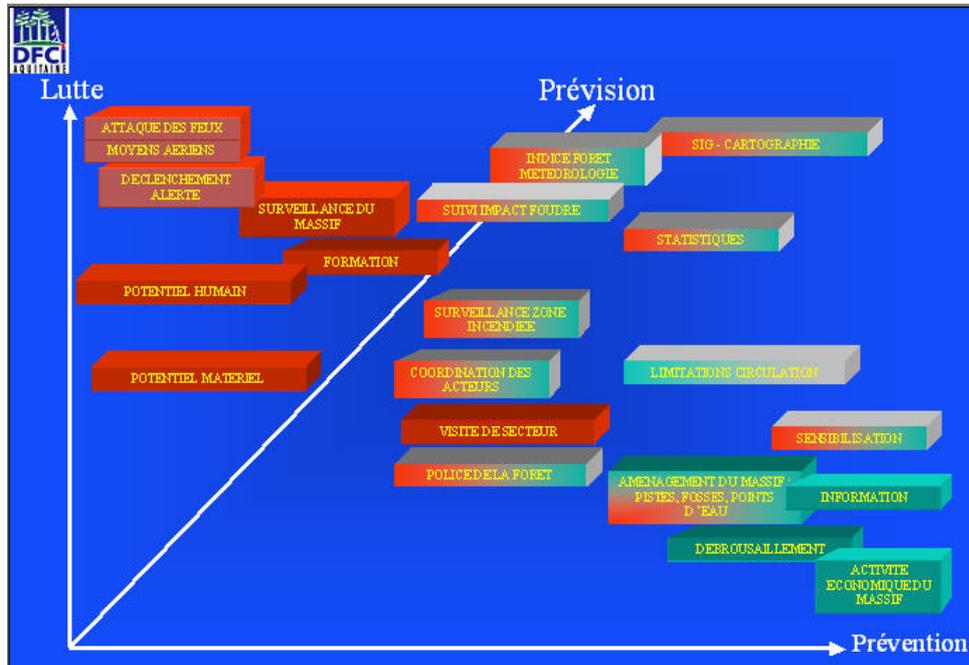


Figure 1— Synergy of prevention, fighting and forecasting actions

Forest owners involved in forest fire protection

Forest owners of Aquitaine, early got involved in forest fire prevention.

Sylviculture a way to protect forest against fires

By thinning, pruning or clearing the undergrowth, forest owners reduce loads of combustible materials and break horizontal and vertical continuity of vegetation. These operations prevent fires from propagating.

Moreover, forest owners, timber firms and development organisms work in plots:

- They drive on tracks also used by fire brigades
- They can give the alert when a fire breaks out.

Sylviculture is the first link of forest fire prevention. But prevention is also a main point for timber economy.

The early organisation of forest fire prevention associations

Following from large wildfires from 1868 to 1895, forest owners got organised into local forest fire prevention associations in order to fight and develop infrastructures.

From 1944 to 1958, 400 000 ha burnt which represents 40 percent of the territory, and 82 persons died.

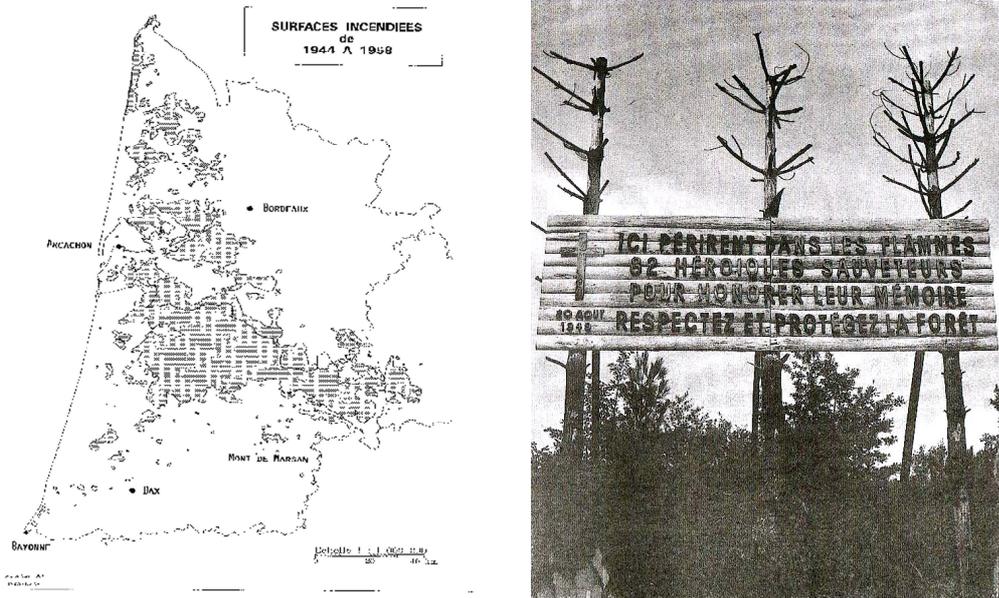


Figure 2—*Forest fires damages from 1944 to 1958*

Since this tragic event, several legislative texts got forest owners organised. In particular, the ordinance of the 25th April of 1948 made compulsory the creation of Forest Fire Prevention Syndicate Associations (ASA de DFCI) in each shire of the Landes de Gascogne. Today, there are 241 Forest Fire Prevention Syndicate Associations on 454 shires dealing with 2 500 volunteers. These associations are all members of their respective departmental Union or Federation.

These Unions or Federations themselves belong to the Regional Forest Fire Prevention Association of Aquitaine (ARDFCI).

Politicians and State entrusted local participants with the protection and the development of their own territory.

Forest Fire Prevention infrastructures

The aim of these Forest Fire Prevention Syndicate Associations is to reduce the number of fires which burst out and to limit the propagation of fires by fighting fires as early as possible. That means guaranteeing water availability and enabling the access to forest as fast as possible. To reach this aim, Forest Fire Prevention Syndicate Associations build, maintain and set of standards prevention infrastructures as:

- forestry tracks used to reach plots (42 000 km),
- water points in order to keep water as close as possible to fires.

Landes de Gascogne used to be a swamp. *Pinus pinaster* was planted here in order to drain damp soils, where largest fires burn. Today, a dyke system aims to improve hydraulic management (17 000 km dykes lining tracks).

	Surface boisée ASA	Voies d'intérêt opérationnel (km)			Nombre de ponts (unités)	Fossés Bordiers (km)
		TOTAL Voies d'intérêt opérationnel (km)	Pistes empierrées (km)	Piste sol naturel (km)		
Gironde	460 156	16 900	2 000	14 900	26 600	10 140
Landes	556 752	21 600	2 360	19 240	24 880	5 650
Lot et Garonne	64 892	2 866	237	2 629	2 022	442
Dordogne	99 748	678	563	115		904
Aquitaine	1 181 548	42 044	5 160	36 884	53 502	17 136
DENSITE POUR 10 000 Ha :						
Gironde		367	43	324	578	220
Landes		388	42	346	447	101
Lot et Garonne		442	37	405	312	68
Dordogne		68	56	12	0	91

Table 3—Forest Fire Prevention infrastructures

This policy is efficient thanks to the designation of a responsible for each Forest Fire Prevention Syndicate Association. He is directly responsible for the management of his Forest Fire Prevention Syndicate Association, the inventory and the determination of the needs of forest fire prevention infrastructures collaborating with forest fire brigades.

In 1996, forest fire prevention infrastructures were mapped on a shared Geographic Information System. This GIS is useful to print atlas delivered to all forest services. Fire brigades and Forest Fire Prevention Syndicate Associations enable to update these maps thanks to their field knowledge.

This is a decision - making aid tool for planning and protecting. It also includes geolocalisation of fires and enables to analyse statistics.

Fighting services involved in forest fire protection

Fire brigades main task is to fight fires as fast as possible after they break out thanks to forest fires prevention infrastructures. They work collaborating with the mayors and the responsible of the Forest Fire Prevention Syndicate Associations. By this way, they share their knowledge and experience.

Fire brigades are also in charge of delivering good advice to the services working in forest and to the inhabitants of houses situated close to forested areas.

Daily field visits enable them to forecast the fire risk by visiting the lightning impacts and determining the weather fire index.

Local authorities involved in forest fire protection

Shires participate to forest fire protection determining with Forest Fire Prevention Syndicate Associations the needs in FFP infrastructures. They are also essential for fighting thanks to their field knowledge, their advice during fires and their help to keep a watch on fire once it is knocked down.

Shires are also essential to operate law, for instance about the traffic in forest, clearing of the undergrowth, urbanization plans...

Today, forest fire protection is faced with the lack of foresters in shire council, especially in shires localised close to big urban areas like Bordeaux. As a consequence mayors lack of advice to guarantee safety on their own territory which they are responsible for.

A policy financed from local authorities to Europe

In financial terms, Forest Fire Prevention is possible thanks to a 2.3 € ha subscription from forest owners.

Forest Fire Prevention Association financial investments (2 687 k€)

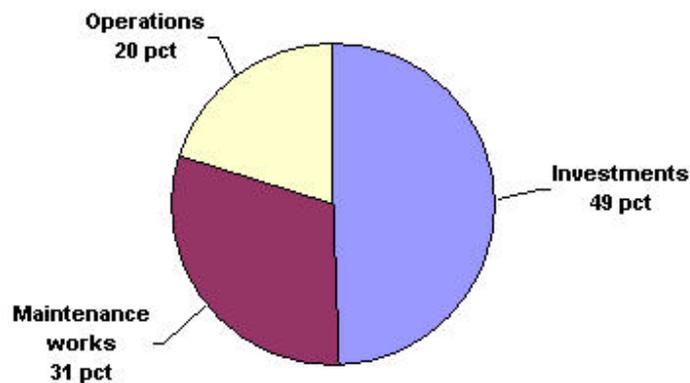


Table 4—Forest Fire Prevention Syndicate Associations financial participation

It is also possible thanks to subsidies from local authorities, French State, and Europe.

Forest Fire Prevention Investments (4 575 k€)

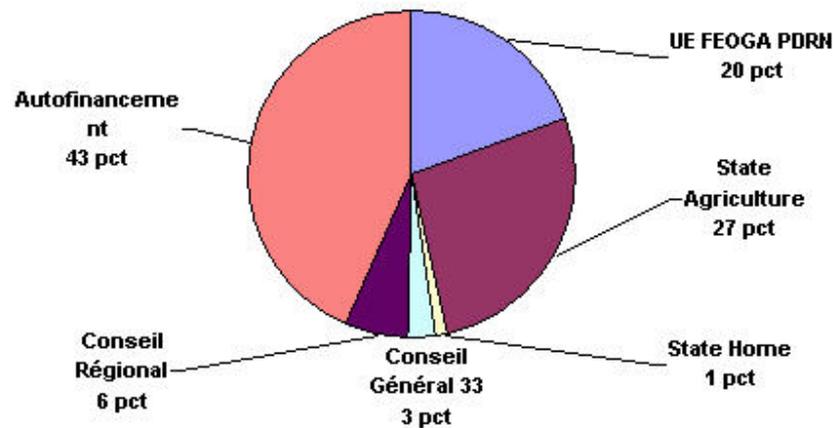


Table 5—Forest Fire Prevention investments

A new organism about risk management

Today, Aquitaine GIS for Forest Fire Prevention is managed by the Public Interest Group for Territorial Development and Risk Management (GIP ATGeRi). This organisation federates:

- the State with the Ministry of Defence, the Ministry of Agriculture, the Ministry of Environment,
- the Civil Safety Departmental Services (SDIS),
- the Departmental Forest Fire Prevention Associations, Unions and Federations,
- the Regional Forest Fire Prevention Association,
- the French Forest National Office (ONF).

It deals with Forest Fire Prevention but also with other risks.

This human, technical and financial synergizing enables to safeguard population, forest owners investments and to protect resource for industries.

Conclusion

Aquitaine Forest Fire Prevention efficiency is difficult to quantify but seems to be interesting concerning its stakes. This level of protection is possible thanks to the synergy between forest owners, Forest Fire Prevention Syndicate Associations, local authorities, fire brigades and State. It is useless to mobilize a lot of means if they are not managed by all the parties involved.