



INFOCA Plan

**Wildfire Prevention
and Suppression
Plan of Anlaluca**

FIRE HARZARD CULTURE IN WILDLAND-URBAN INTERFACE

The Regional Ministry of the Environment, in its track for improvement of managing politics and tools in the fight against wildfires, tries to promote participation in those projects of a European scope that connect regions with similar problems with the intention of sharing possible solutions.

A new European project is being carried out in response to the increasing risk of wildfire occurrence, especially in wildland-urban interface areas, and the need to progress in the design of useful protocols to be applied in the management of related aspects to these problems. The initiative has been called “Fire Hazard Culture in Woodland Interface/Habitat” - **PYROSUDOE** is its acronym - (as part of the Programme of Territorial Cooperation of the Southeast European space: Interreg IV B SUDOE), 75% financed by FEDER funds.

The **European partners** being the French regions of Languedoc-Roussillon, along with the Conseil General du Gard, acting as project leader, DFCI Aquitaine and the Office National des Forêts, as well as the Portuguese Municipalities Association (AMAL Grande Área Metropolitana) from the Algarve and the Spanish representation of the Govern de les Illes Balears (Balearic Regional Government), the Diputación Provincial de Teruel, Aragon (Provincial Council of Teruel) and the Junta de Andalucía (Andalusian Government) through the Regional Ministry of the Environment.

Project’s **main objective** is aimed to the improvement of fire management policies in wildland-urban interface areas in favour of fire safety.

The project is a result of the joint work among project partners around four work subjects. Hazard Culture, where this publication is framed with the mission of bringing fire prevention and extinction appliances (through INFOCA Plan) closer to people, is one of them.

CONSERVATION AND SUSTAINABLE USE OF THE ANDALUSIAN NATURAL ENVIRONMENT

In current society, any matter related to nature conservancy awakens great interest under the conviction that natural resources aren't endless and its deterioration leads to an important loss in terms of quality of life, a fact that could be avoided by promoting a sustainable development model.

Forest areas, composed of woodlands, shrub lands and grasslands, occupy more than 4.6 million hectares which is more than 50% of the autonomous community territory. Within this area, nearly 3 million hectares correspond to wooded areas, where quercus species (holm oaks, cork oaks, quejigas and oaks) are prominent as well as different varieties of pine trees.

Mediterranean forest ecosystem, exemplified by holm and cork oaks, is the defining component of the Andalusian forest area. Preserving this natural resource and avoiding its deterioration or destruction becomes, therefore, a duty of public authorities.

Informed of these values, the Andalusian civil service decides to set in motion the appropriate mechanisms for its conservation.

THE STRENGTHS OF NATURAL ENVIRONMENT

The great strength of natural environment resides in its extraordinary diversity of its resources (cork, pine, wood, mushrooms, grass, pastures, fruits, landscape, etc). Its sustainable conservation and exploitation being target priority to Andalusian civil services.

These economic resources, generated by the forest field, are both plentiful and diversified. However, many other environmental resources and functions to be found in this forest field can go unnoticed not being economically valued, such as soil protection and fertilization, water regulation, maintenance of a key ecological and cynegetical fauna or the providing of a place for leisure and amusement.



THE THREATENS OF NATURAL ENVIRONMENT

Wildfires, in the first place, followed by erosive processes and desertification, plagues and diseases, soil or water contamination, loss of biodiversity and danger of extinction of certain animal and vegetal species are some of the threatens suffered by this rich and varied Andalusian natural patrimony.

Wildfires are the most serious threaten to natural environment, being Andalusia's main concern at a regional level (according to the yearly Andalusian eco-barometer).



CONSERVATION PROGRAMMES

The Regional Ministry of the Environment has been developing a number of programmes aimed to the conservation and valuation of its natural resources aiming to the avoidance or minimization of negative effects over ecosystems caused by the already mentioned problems that are framed in environmental politics carried out by Andalusian Government.

We can infer that INFOCA Plan, a wildfire prevention and suppression appliance implemented in Andalusia, is one of them.

THE DEFENSE PROGRAM AGAINST WILDFIRES: PLAN INFOCA

This Plan concerning firefighting gained importance and social significance in response to the general concern these kind of catastrophes awaken and the importance Andalusians give to the defense of their 4.6 million hectares of natural patrimony against the action of fire.

This sensitivity shown by the Andalusian society with respect to this problem has been taken into consideration since the beginning of the 1990's. It was present in the drafting of the first INFOCA Plan in 1995 in which the model of prevention and fight against wildfires in Andalusia is displayed. This model has been established and consolidated as an effective appliance with an appropriate response capability to the environmental problem.

INFOCA Plan is the instrument set up by the Regional Government of Andalusia for the defense against fires within forest land. Among its main features, we can mention the following:

- A unique direction in wildfires suppression that corresponds to the Regional Ministry of Environment.

- Integration of both prevention and firefighting, as well as restoration of burnt areas.
- Integration and coordination of the different resources provided by the different institutions and organizations.
- High degree of professionalism of the personnel attached to the Plan.
- Important provision of material resources (infrastructure, fire trucks, aerial resources, etc).
- Application of advanced technologies to the optimization of the resources at disposal.

In 2011 the new INFOCA Plan decree came into effect, being recognized to all intents and purposes as one of the Emergency Plans in Andalusia.



FACILITIES

The fire prevention and extinction appliance counts on multiple facilities in Andalusia. Acting as managing centers we can find the Regional Operations Center (COR in its Spanish acronym), located at the Regional Ministry of the Environment head office, and the Provincial Operations Centers (COP), one in each province.

In addition to these appliance operational facilities, we must highlight the Forest Defense Centers (CEDEFO) distributed across Andalusian forest land where patrols and terrestrial and aerial resources are located. INFOCA counts also on 3 bases for specialized brigades (BRICAS), airtanker runways, both the property of the Regional Ministry of the Environment and external, some other fire support bases, as well as civil airports.

All these facilities are used in the deployment and operational capacities of terrestrial and aerial resources.

SURVEILLANCE AND DETECTION SYSTEMS

For surveillance and fire detection INFOCA Plan has a network of fixed monitoring points, spread throughout the autonomous community whole territory, as its basic element. This network is completed by the Forest System for automatic detection through infrared cameras. Beside, in terms of mobile surveillance, the labor of support teams must be emphasized too. The Plan counts on a radio communications network as well, that facilitates its correct operation.

Citizenship is a very important pillar in surveillance, undertaking the role of giving urgent warning through 112 (emergency telephone number) at any fire situation in forest presence.



HUMAN RESOURCES

Nearly 5,000 people will covering the different professional categories presented in the INFOCA Plan. Such personnel come from the Regional Ministry of the Environment and from the current Public Environmental and Water Agency. Everyone has a work schedule implying physical presence and availability that make possible its working and mobilization in the case of any of the emergencies INFOCA can be involved in, being adapted to the different danger periods along the year.

TERRESTRIAL RESOURCES

INFOCA Plan counts on a fleet of fire trucks that make possible to carry water to the fireline and propelled it pressurized, alone or mixed with fire retardants, by means of a hose. It also has 8 UMTs (Meteorology and Transmissions mobile units), one per province and an UNASIF vehicle (Wildfires Analysis and Monitoring Unit) for big fires assigned to COR.

In addition to these, there are 4x4 vehicles for the displacements of patrol, technicians, environmental agents ("rangers") or support teams. The fleet is completed by bulldozers equipped with trailers for its displacement.

AERIAL RESOURCES

Fleet is composed of helicopters (for both personnel transport and extinction or else great capacity), along with airtankers, amphibian planes ("Canadair") and surveillance and coordination planes. Their total number reaches to 40. They're strategically distributed throughout the whole Andalusian territory.

The vast majority are hired directly by the Regional Ministry of Environment. The rest is provided by the Ministry of Environment and Rural and Marine Affairs.



PREVENTIVE SILVICULTURE

Silviculture is the science that studies the management of forest lands in order to obtain from them a continuous and sustainable production of goods and services demanded by society. In Mediterranean woodland and forest, wildfires are the major threat and that's why preventive silviculture is understood as a science specifically focused on wildfires prevention.

It 's carried out by means of implementing fire defense performances in the Andalusian territory (areas, firewall lines or bands) that section territory in prevision of a possible fire occurrence and provide security when ground personnel undertakes extinction works. Forestry treatments are, moreover, carried out with the intention to reduce forest fuel buildup on the environment. In this sense a painstaking work of pruning, clearing, slashing and stripping is done.

These treatments are executed through heavy and light machinery or by controlled grazing. Other methods such as prescribed burning or fitocides, haven't been intensively used in Andalusia up to the moment and should receive further examination because of their interest. They all have own optimal conditions of application, according to each specific forest characteristics and to the time of year.

Grazing in firewall areas appears as a useful tool for fire prevention while it offers very positive environmental and social possibilities what makes it a valuable land management system. The Red de Áreas Pasto-Cortafuegos de Andalucía (RAPCA is composed by a collection firewalls and firewalls areas with a maintenance based in a controlled livestock use.

All these tasks must be carried out in both public and private lands. This way the Law on Forest Fire Prevention and Fighting (Ley de Prevención y Lucha contra incendios) makes compulsory for all forest farms to have a forest fire prevention plan at disposal.



The collaboration with infrastructure management agencies (ADIF in relation to railway lines; REE and ENDESA, in relation to electric lines), by means of agreements, in the cleaning up of banks it has also been satisfactory. Within the framework of these agreements joint committees are run for follow up and valuation.

SOCIAL PARTICIPATION

More than 95% of fires are caused by human intervention, whether deliberate, negligent or accidental. For that reason, the Regional Ministry of Environment is stressing the cooperation with all those collectives that, some way or another, are related to the problem and with the rural environment in general (farmers, cattle raisers, hunters, beekeepers, residential owners and other facilities within the forest field. The usage of prevention tools typical from Andalusia it has also been promoted: Local Emergency Plans for Forest Fires, Personal Protection Measures, Local Quick-Help groups and Forest Defense groups.

For all this, along with the INFOCA team, we can find a specific prevention and social participation technician in every province in charge of the promotion and coordination of all these tasks.

CITIZEN AWARENESS

Population awareness is a basic pillar in prevention politics within INFOCA Plan. It is done through different ways: advertising campaigns on mass-media, informative road panels according to the season of danger, dissemination of prediction maps of fire ignition probabilities on daily TV weather forecasts, workshops on population awareness, etc The work done with the educational community through the program "Grow up with your tree" (Crece con tu arbol) it's been also very important. It has been developed through scheduled visits to Forest Defense Centers by different school centers where they get in contact with the reality and the problems of forest fires.

In one word, INFOCA Plan has bets on both short and long term awareness.



REGULATION OF FIRE USAGE IN AGRICULTURAL WORK

There's been important changes in the use of fire in rural environment in the past 50 years and enormous increase in fuel buildup that makes necessary to regulate its use in a way that doesn't represent a threat to Mediterranean woodland.

It has been found that since the emergence of limitations in the use of fire in forest lands and areas of forest influence in 2006, there's been a dramatic fall in the number of fires due to these causes during the months considered of maximum danger.

Subsequently, burn-offs in agricultural work has been permitted during weekends and evenings, under specific conditions and always off-danger periods, an action that was banned before. With this measure the Regional Ministry of Environment is adapting itself to the requirements of rural population and adapting the regulations to their necessities.

SURVEILLANCE AND POLICE WORK

The work of environmental officers y their specialized force, the Research Brigades of Forest Fires (BIF) has been essential. The joint work with the

Civil Guard and the Autonomous Police has been giving its fruits leading, more and more frequently, to the identification of many of those who caused the fires.

APPLICATION OF NEW TECHNOLOGIES

The latest technologies are being used in order to improve the management of extinction means, track those units sent to fight the fire through a GPS device and speed up the delivery of available information for a good decision making by the Extinction Department.

Among the most outstanding applications currently in use in the INFOCA Plan we can find: Sig-DIF (a system aimed to help in the management of extinction operations and to give advice on the different attack strategies); SIGYM (an advanced weather forecast system); FARSITE y CARDIN (wildfires simulators); Telemaq+, CYGIM y HORUS (IT applications on the location and positioning of aerial and terrestrial resources); CONDOR (3D viewer for planification during wildfires extinction); SIADEX (artificial intelligence system supportive of extinction department); radio-voice communications integrator; IR (thermal) Monitoring System (fire automatic detection by infrared and optical cameras).

FOREST FIRES ANALYSIS

Another of the work lines boosted by COR consists in the execution of a systematized model of analysis files on the most outstanding fires. This analysis enables the identification, gathering and filing of all the information related to fire suppression works, allowing the compilation of data on fire behavior in the different Andalusian provinces. In the future, this work will also enable to analyze existing preventive structures and to evaluate necessities in order to improve subsequent extinction works. For an ongoing and computerized data collection a series of web sites have been created.

Once this line of work with COR has been promoted, the intention is to extend the analysis to all device work centers so that all personnel can share homogenized and systematized information and have at it at their disposal, making easier the possibility of conducting research and analysis on it.

A warning system detects any possible wildfire occurrence both at a technical level, among Plan team members, and at a general population level for them to take appropriate precautions.

SECURITY IN SUPPRESSION ACTIVITIES

The safety of the personnel is the priority during fire suppression, along with security for the possible population that could be affected. Different tasks related to this prevention of hazards, for instance: monitoring of accidents and incidents in order to identify and improve possible shortcomings and updating and improvement of both Individual Protection Equipment (EPIs) and intervention protocols during suppression work.



PERMANENT UPDATING

As far as possible, a specialization of the personnel assigned to INFOCA appliance is done through training programs specifically designed for each professional category. In line with that an investment in the improvement and new creation of facilities is being carried out as well as the adaptation to the new necessities of terrestrial and aerial resources.

AGAINST FIRE, WE ALL ACT

IN CASE OF FIRE,
GIVE URGENT CALL!



Plan INFOCA

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