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# Inventory and conservation of mires in the Rhône-Alpes region



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*The “Mires in France” LIFE program, the starting point for regional action and conservation of the various types of mires is considered a priority by the European Union. These ecosystems are listed in Appendix II of the European Habitats directive which has targeted the creation of a network of protected nature reserves called Natura 2000.*

*In an effort to organise its participation in this European program, Espaces Naturels de France (ENF), a non-governmental organisation uniting the regional and departmental nature conservation reserves in France, set up a conservation project for mires. This obtained funding in the framework of the LIFE program from the European Union as well as from the French government and local government bodies.*

The two major goals of this initiative concerned the formulation of a sustainable conservation policy on the national level and, on the local level, the launch of emergency action in view of acquiring and managing land on 38 sites throughout France.

### Formulation of a sustainable policy

To this end, a National Mires Committee was created with the backing of the government (Ministry for Territorial Planning and the Environment).

This committee is made up not only of nature reserve management agencies, scientific researchers and socio-economic partners, but also programme managers. It worked on evaluating the causes of damage to mires and prepared a report on the industrial extraction of peat. It also drew up an inventory of the current knowledge on the subject and analysed the relevance of the existing inventories.

On the basis of the above assessments, a number of regulatory modifications were proposed to limit artificial planting of trees in mires and the creation of ponds. Efforts were undertaken with the companies concerned in view of halting the use of peat for garden compost.

A national strategy aiming to preserve wetlands was set up based on the following points, namely the cre-

ation of regional inventories, efforts to rationalise diverse public policies, the establishment of partnerships with farmers and the creation of a Mire documentation and coordination centre to initiate and coordinate action as well as inform on the action.

This program was also the means to prepare:

- Training seminars on the inventories and the management of marshes;
- A summary of the bibliographical data on these environments;
- A manual on the management of mires in France, intended for site managers;
- A book intended for the general public on mires and marshes.

However, the main success of these efforts was to establish contacts on the subject of mires between the many people and bodies active in the protection and management of nature reserves.

### Emergency interventions

Emergency action was taken on 38 sites comprising 47 mires that are representative of the different types of mire environments found in France.

This program covered almost 2500 hectares of mire habitat listed in Appendix I of the Habitat Directive.

After three years of work, the following has been achieved: • Two regional inventories drawn up • 38 management plans established • Land-acquisition and management policies set up for 1229 hectares • Restoration work on 30 sites • Management work on 14 sites • Creation of seven discovery trails.

### EMERGENCY INTERVENTIONS

#### IN THE RHÔNE-ALPES REGION

• **The Cerin mire.** This is a 13.5 hectare fen that was produced by the slow filling in of a dip in the land cut out by a glacier. It is managed by the CREN (Conservatoire Rhône-Alpes des Espaces Naturels / Rhône-Alpes Nature Land Conservatory).

A circular lake remains in the middle of the site, the sole remains of the dip that has been gradually filling with peat for the last 12 000 years. On this site, similar to all the sites where the Conservatory is active, the following was undertaken: • Efforts to acquire land and establish agreements (11.4 hectares) • Drafting of management plans and a diagnosis of the fauna, flora and habitats. Management goals were set up and a five-year work plan established; • Start-up of the necessary management and scientific monitoring. This included the work required to clear



**Figure 1.**  
*Aubrac cattle on  
Herretang mire.*

and mow the fens using suitably equipped tractors (low-pressure tyres) to compensate for traditional mowing that was carried out until the end of the 1970s.

- **The Herretang mire.** In 1994, the CREN and the General Council of the Isère department purchased 60 hectares of this mire, the remainder of a vast swamp area. This site, managed by the Avenir agency (representing the CREN in Isère), was worked to extract the peat from 1945 to 1997. As a result, there are a number of peat extraction zones that are very favourable for the colonisation of fauna and flora. The program was the occasion to implement a site management plan which included the following points • Clearing work • Digging tarns and water holes, as well as grading the banks • Setting up a cattle grazing area and another horse grazing area • Mowing late in the season.

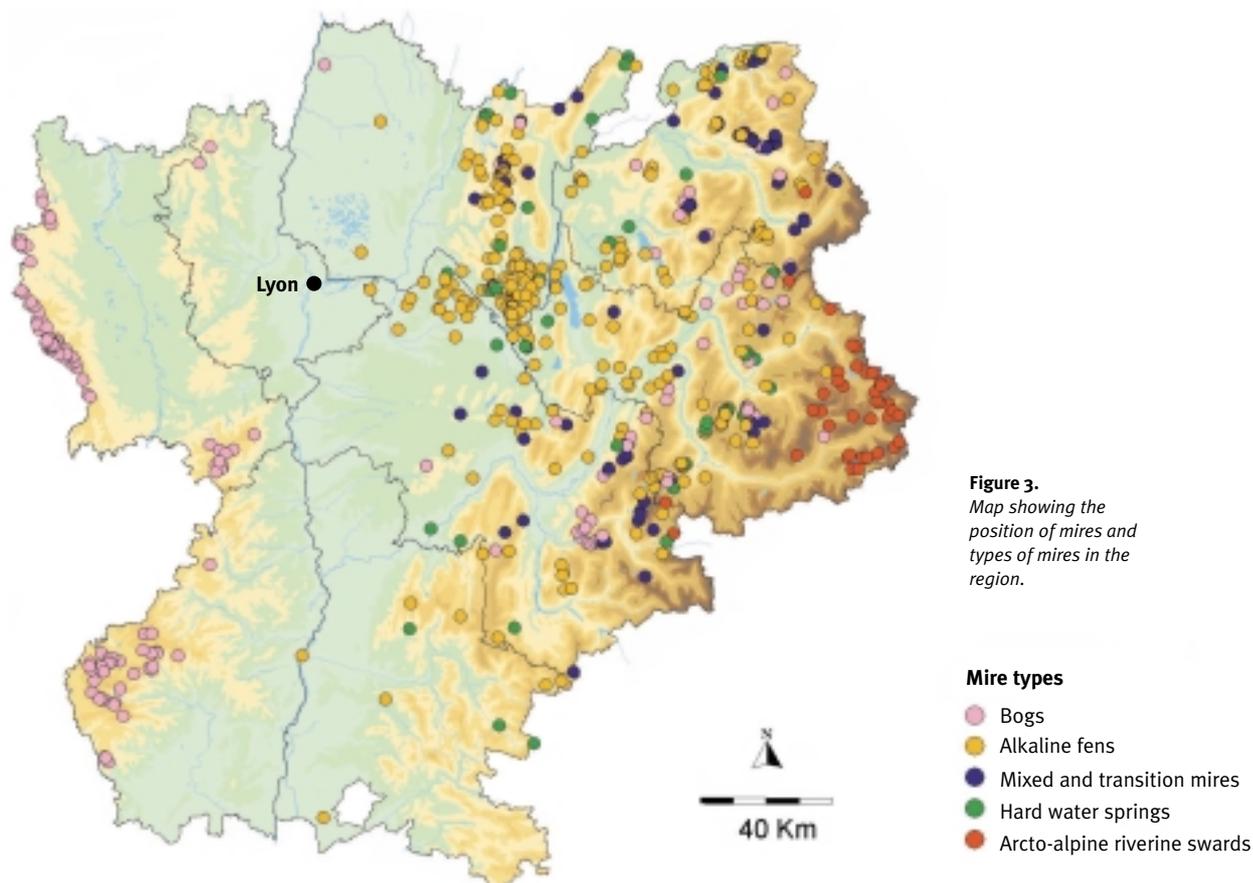
### **THE INVENTORY OF MIRES IN THE RHÔNE-ALPES REGION**

Located in the south-eastern section of France, the Rhône-Alpes region covers a vast territory on both sides of the mid-Rhône valley. To the west, the eastern slopes of the granite Massif Central range, and to the east, the northern Pre-Alps overlook a vast zone of rolling hills and valleys, that generally consist of limestone. The diversity of soil, climates and hydrological networks generated many different types of mires.

Consequently, it was quite natural that the CREN, with financial support from the State, the region, the Water Agency and a certain number of departments (Drôme, Isère and Savoie), undertook, from 1997 to 2000, to organise and carry out the inventory of mires in the Rhône-Alpes region. To that end, it was



**Figure 2.**  
*Old peat  
extraction zone  
colonised by  
Herretang mire.*



**Figure 3.**  
Map showing the position of mires and types of mires in the region.

assisted by its departmental representatives: • The Agence pour la Valorisation des Espaces Naturels Isérois Remarquables (AVENIR) in the Isère department • The Conservatoire du Patrimoine Naturel de la Savoie (CPNS) for the Savoie department • The Agence Pour l'Étude et la Gestion de l'Environnement (APEGE) for the Haute-Savoie department.

**Organisation of the inventory.** The mires to be catalogued were defined by their size and type. They had to be at least one hectare in size and include at least one of the following habitats:

- Birch and conifer swamp wood (CORINE 44.A) • Acidic bogs with *Sphagnum* (CORINE 51.1, 51.2, 54.5, 54.6) • Hard water springs (CORINE 54.12) • Fen-sedge bents (CORINE 53.3, 54.2) • Arcto-alpine riverine swards (CORINE 54.3).

This definition excluded acidic fens (CORINE 54.4) which are not endangered and are very frequent along the edge of the crystalline Massif Central. The minimum size of one hectare was decided upon due to the limited financial resources available for prospecting and above all a clause in the 1992 French water law. This clause sets one hectare as the limit above which it is necessary to request authorisation from the competent local-government body prior to undertaking any work in view of modifying the hydrological system.

Prospecting in the field was planned using maps drawn from the bibliography, previous local inventories and topographical maps (scale 1:25 000).

All the identified sites were visited and inventories made during the 1997, 1998 and 1999 seasons, using an standardised field-data sheet.

**Constitution of a computerised data base.** All the data noted on the field-data sheets was entered into a computer using a special application of the ACCES program. The basic information consisted of data on the natural habitats, lists of high-value species of fauna and flora, the name of the observer(s) and the date of observation.

The data base was designed to produce two types of information, the summary sheet and statistical data in response to specific queries.

The summary sheet for each site contains the main information with a map of the area (scale 1:25 000). The following is systematically included: • the map (scale 1:25 000) with indications on the borders of the mire and its catchment area, wherever possible • an administrative description of the site • site usage and threats • a description of the environment (fauna, flora and the habitats).

Queries to the data base produce statistics on a particular species, a habitat or a geographic site.

Following visits to almost 1000 sites, a total of 623 mires were identified, characterised and described.

#### **Inventory results**

The inventory of these 623 sites, plus the in-depth observations in the field, confirms the importance of mires in the Rhône-Alpes region:



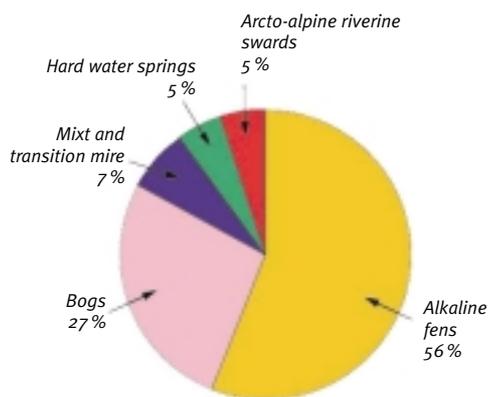
**Figure 4.** Map showing the distribution of *Liparis loeselii* distribution.

- taken together, they cover a large amount of land, over 10 000 hectares;
- their diversity is exceptional;
- they have a remarkable biodiversity of the flora with 157 protected or endangered plants that are representative of the Alpine, Mediterranean or continental influences;
- they have a major significance in terms of the fauna with almost 140 remarkable species including 13 listed in Appendix 2 of the Habitat Directive (notably five butterflies);
- they are distributed over a number of ranges, each comprising many mires (Massif Central, Jura, Alps).

The inventory was also the occasion to determine the degree to which mires have disappeared. In the Isère department, an inventory was carried out in the 1940s. It showed that at that time, there were 43 mires covering a total of 1 710 hectares. In 1998, almost 85% of the mires, essentially located in flat, low-lying areas, had disappeared!

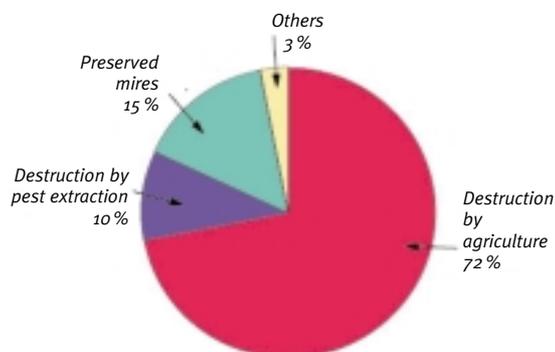
The inventory also provided information on the potential threats to these environments. In the Ain department, almost 40% of the sites are now endangered due to the natural closing in of the vegetation following agricultural abandonment of these zones. Until the 1970s, the fens were mowed and/or grazed, thus maintaining a number of remarkable species that require an open environment.

**PIE CHART OF MIRE TYPES BY SURFACE**



**FIG. 5**

**EVOLUTION SINCE 1950 OF THE ISERE DÉPARTEMENT MIRES**



**FIG. 6**

## FORMULATION OF A REGIONAL CONSERVATION STRATEGY

The information acquired through the inventory will be used in three different domains, i.e. scientific, general information and conservation policy.

The data on the distribution of the various species and the different mire habitats will be made available to scientific researchers and will contribute to the accumulation of knowledge in the domain.

The information acquired and the general data summaries on the rareness of species, their decline and on the identified threats will be used in drafting an information document intended for elected officials and the managers of rural areas. The goal is to prevent the destruction of mires by informing people on their environmental value and to encourage conservation and management projects on the local level.

The administrative bodies in charge of authorising territorial-planning projects will receive the entire set of data sheets on the mires in the region with the applicable regulatory documents on the protection of wetlands and a further document explaining why it is important to maintain these remarkable ecosystems.

Finally, the CREN and the administrative bodies in charge of protecting the natural environment now have a good, general overview of all the mires in the region and can monitor the effects of the conservation policy implemented •



**Figure 7.**  
Inventory of  
mires in the  
Rhône-Alpes  
(Ardèche) region

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