

Formation of the network of non-intervention forest reserves (RBI) in the Rhône-Alpes region



Over the past twenty years, the preservation of natural environments and of forests in particular has become a general concern on the European level. The two main reasons for this new attitude are the greater awareness of the public concerning environmental problems and improved scientific knowledge on how forest ecosystems operate. This explains why the maintenance and restoration of forest nature reserves preserved from certain socio-economic pressures has become an ethical problem for both the scientific community and the public. In France, the French National Forest Agency (ONF) is in charge of managing the forest belonging to the State and a large number of townships. It has contributed to the creation of a national network of non-intervention forest reserves (RBI) in the framework of the European decision to set up a network of representative habitats in the European Union, called the Natura 2000 network.

A NATIONAL POLICY

TO INCORPORATE BIODIVERSITY

IN FOREST MANAGEMENT

It was in 1993 that the DERF (Forest and Rural Land Department) in the French Agriculture Ministry issued a directive on taking biodiversity into account in forest management. This was followed six months later by ONF instructions on the same subject and by a second set of ONF instructions in 1995 concerning biological reserves and sites with particular ecological value. At that time, two major points were stressed, i.e. the need to initiate conservation management for the zones offering the highest levels of biological diversity and the need to take biological diversity into account in all the forests managed by the ONF. At the end of 1998, further instructions on non-intervention reserves (RBI) were issued, thus constituting a complete and coherent policy.

This overall policy targeting the incorporation of biological-diversity considerations in management is currently structured around three main points.

1) Incorporation of biological diversity in all the forests managed and on all levels of forest management, i.e. from the design stage of the forest management plan on through to its implementation in the field (decisions on the trees cut, general work, etc.). Optimisation of biological diversity is perceived on three scales: • ecosystem diversity: encourage forest edges and marginal areas (pools, grassy areas, rocky zones, etc.) • diversity of species: maintain sites with rare species, the diversity of trees, etc. • diversity within species: preserve the genetic diversity of species by encouraging wherever possible the natural regeneration of tree species in forests.

2) Conservation (or improvement) of the biological richness of sites with high environmental value. Conservation management is implemented through ecological engineering work. Classification as managed biological reserves is proposed for the most worthy sites.

3) Formation of a network of non-intervention biological reserves (RBI), primarily for scientific monitoring. In general, the public is not allowed in these reserves.

To manage the network of biological reserves, local advisory committees were set up. Each committee manages a number of sites. The fact that these committees are very diverse in their composition (elected officials, scientific researchers, forestry experts) ensures extensive debates and a relatively comprehensive approach to the various aspects of biological reserves. In the Rhône-Alpes region, six local committees cover the following six geographical zones: the northern Pre-Alps, the southern Pre-Alps, the Alps, the Mediterranean environments (southern Ardèche department), the Ardèche mountains and the Pilat zone. There is also a regional advisory committee with a comparable composition. Its main purpose is to advise the ONF on its policy concerning the creation of biological reserves.

NON-INTERVENTION FOREST

RESERVES (RBI)

Their role is defined in the ONF document 98-T-37 and consists of the following points.

Constitute a reservoir of different habitats. The purpose is to restore the natural features of the concerned habitats, i.e. develop the “virgin” forests of tomorrow while maintaining the remnants of the primitive woods and constituting reservoirs for the forest genetic pool.

Serve as a laboratory for scientific study. The goal is to learn the dynamics of the natural evolution of forest ecosystems, to gain further knowledge through the extended observation of natural forest dynamics and to apply the results obtained to the managed forests. In this manner, it will be possible to align forestry techniques as much as possible on the spontaneous development of trees, while ensuring maximum observance of the general ecological laws to improve the effectiveness of forest-ecosystem management. This should make it possible to avoid forest-management errors. The knowledge gained in the non-intervention reserves (RBI) may also be used to correct undesirable natural processes, notably diseases. The RBIs may be the means to answer a certain number of questions, for example: “How do forests regenerate when there is no human intervention?”, “What is the influence of the herbaceous layer on the regeneration of the various tree species?”, “How do the various animal populations develop?”, “To what extent do dead trees help or hinder regeneration?”.

This data is obtained on a number of permanent study spots that are established and monitored in compliance with a European protocol (COST E 4; see the bibliography).

Preserve wild animal and plant species. The species concerned here are those whose survival is endangered by techniques making forests excessively artificial. These species will find refuge in the RBI zones because the forest, in its natural state consisting of a mosaic of habitats, offers a wide range of ecological niches. RBIs also encourage the development of protected species by the interconnection of reserves via forest corridors.



Figure 1.
RBI of
Val-Sainte-Marie
(Vercors, Drôme)

Contribute aesthetically and in terms of landscapes. Forests, a central element in the Barbizon school of painters in the 1800s, must contribute to enhancing our cultural and natural environment. Their role as classrooms will also be developed because the RBIs have major potential for training and education to meet the increasing social demands placed on forest environments.

ESTABLISHMENT OF THE RBI NETWORK IN THE RHÔNE-ALPES REGION

Establishment of the network took place in a number of steps.

Analyse the habitats listed in the appendix of the 1998 instructions. The plant sociology side of the question was investigated because the 1998 documents listed the habitats in plant-sociology terms. There were two aspects to this work.

- On the one hand, it was necessary to list the associations corresponding to the alliances or sub-alliances mentioned in the documents in order to obtain the most precise information possible. First of all, the habitats not indicated in the instructions for Rhône-Alpes were identified and eliminated. Then the associations corresponding to the selected alliances or sub-alliances were defined on the basis of the inventory of semi-natural forests in the northern Alps drawn up by Greslier (1993) and on the temporary version of the Natura 2000 habitat manuals currently in the process of being completed for France.
- On the other, it was necessary to provide the field workforce participating in the search for new habitats with a set of accessible and easy-to-learn criteria, as well as data on the corresponding geological facies.

Provide further information on the goals pursued. The first goal, i.e. the formation of a network of stands representing all forest habitats (and in the most “natural” state possible), was soon followed by two further goals.

- Monitor the natural regrowth of the forests damaged by the major storms in December 1999. In the beginning of 2000, the ONF DT-ASE (Technical department for territorial planning, forestry and nature sites, in charge of the program on the national level) decided that the zones damaged by the storms could be turned into RBIs in order to understand, over the medium term, the ecology of windthrows in as much as they are major elements in the renewal of natural forests. As the Rhône-Alpes region suffered very little from the storms, we did not propose any such sites.
- Monitor the dynamics of natural regrowth in formerly open spaces. It was during visits to the Ardèche mountains that this aspect slowly came to be viewed as an important element. The Monts d’Ardèche are a region where the decline in agriculture and in human occupation in general is particularly clear. As a result, the slopes naturally revert first to fallow land, then eventually to forests, when the land is not simply planted with trees. It was therefore

decided to observe this natural succession of events as well, to gain knowledge in view of implementing the old forester's saying, "imitate nature and accelerate the process".

Inventory the habitats already "sampled" in the Rhône-Alpes region. In 1995, the ONF participated in the study of "semi-natural stands in mountains" (N. GRESLIER, CEMAGREF Grenoble).

Following the study, the initial RBI applications were drafted and resulted in the first three RBI zones in December 1998.

- Combe d'Ire, a 77.42 hectare site with a further 39 hectares set up as a managed biological reserve (RBD). The site covers parts of two townships, Chevaline (Haute-Savoie) and Jarsy (Savoie). The site was selected due to the presence of two priority habitats listed in the European directive 92-43, the mixed ravine and slope forest (CORINE 41.4) and the rusty alpenrose mountain pine forest (CORINE 42.41), plus a large number of rare and protected animal and floristic species.

- Val Sainte-Marie, a 156.47 hectare RBI site with a 36.9 hectare buffer zone, in the Bouvante township (Drôme) and the Lente State forest. The site was selected due to the presence of priority habitats (*Phyllitido-Aceretum*, *Asperulo-Tilietum*, *Crato-neurion commutatis*), important habitats (*Cystopteridion fragilis*, *Cephalenthero-Fagenion*, *Potentilletalia caulescents*, box thickets), and the wealth of floristic (very rare species) and animal (protected species, notably ungulates) species.

- Aulp du Seuil, a 165.45 hectare site on the high plateaux of the Chartreuse mountains. The site was selected due to the presence of many protected species, notably reptiles and birds, as well as high-altitude lapies habitats.

A number of other sites are currently being evaluated in view of becoming RBI sites.

- Combe d'If (Isère), a 50 hectare site. The intention is to protect environments at the foot of cliffs in the Chartreuse mountains.

- Chavade State forest (Ardèche), approximately 900 hectares. Protect sites with significant floristic and ornithological value.

- Bois Sauvage State forest (Ardèche), approximately 450 hectares. Protect a site for birds and flora.

- Vercors State forest (Drôme), approximately 100 hectares. Scientific monitoring of the pine and fir tree stands on lapies on the Vercors high plateaux.

- Bellevaux State forest (Savoie), approximately 200 hectares. Grassy clearings, scree-covered slopes, forests in ravines, beech and fir tree stands.

- Ugine and Saint-Nicolas-la-Chapelle communal forests, and the Arly (Nant Pareu, Merdassier) state forest, a restoration zone in Savoie, totalling approximately 230 hectares. Forests in ravines, beech forests and beech and fir tree stands.

On each of these sites, a plant-sociology assessment was carried out to characterise the constituent habitats with a high degree of certainty.

Propose any necessary additions when missing elements were noted.

CONCLUSION : A NUMBER OF DIFFICULTIES

COULD BE SOLVED AT THE EUROPEAN LEVEL

The difficult problem of how to classify forest habitats. From the plant sociology point of view, it was very clear from the start that each site was made up of a number of interwoven habitats forming a mosaic. Under these conditions, it may be worthwhile to draw up a list of groups of habitats often found together due to given ecological conditions, rather than a simple list of habitats to be used in applying the instructions. In terms of communication on the European level, further difficulties are caused by the fact that the plant-sociology classification system is not used throughout the Union.

The importance of the monitoring protocols. Currently, in the RBI system, it is not possible to compare the mechanisms of natural evolution with those resulting from forestry management, because in theory, no interventions are allowed in an RBI. This is why it was proposed to coordinate the protocol governing the permanent study sites in RBIs with that governing forestry monitoring sites in order to study the differences in evolution.

It would also be a good idea to coordinate the protocols for scientific study in the various RBIs in France and even Europe in view of facilitating the processing and comparison of the data gathered on the national and European levels. To date, there is only one common European protocol, i.e. the COST E 4 protocol governing the installation of study sites and forestry monitoring on those spots.

The pros and cons of accepting the public. Theoretically, the public is not allowed in the non-intervention reserves, but it would however be worthwhile to make it possible for the public to visit certain RBIs. Of course, the goal here is not to open all the sites to the public (some are sensitive zones) or to open them indiscriminately, without "guiding" the visitors and ensuring their safety.

But it would be unfortunate not to take advantage of such a magnificent means to educate the public, a means that could also serve as a powerful communication tool for foresters.

The appropriate areas and densities for the RBI network. It may also be worthwhile, over time, to create a secondary network of more numerous but smaller RBIs (10 to 30 hectares), similar to the network that exists in Switzerland, to provide each forester with easy access to an RBI. This type of network has been requested by personnel in the field. There is currently controversy concerning the surface areas of RBIs. Certain observers think they are too small and that over the long term, genetic variability may be limited and the mosaics normally created by the cycle of forest regeneration will not come into being. This phenomenon is currently underway in Switzerland where large areas of non-intervention reserves are collapsing. Other observers, on the contrary, are of the opin-

ion that 50 to 100 hectares are sufficient, but that the RBI should be surrounded by large forests in which extensive forestry techniques would be employed (no clear-cutting and vast replanting programs in particular).

The links between the ONF RBI network and other forest zones, protected zones and non-forest zones.

Many networks of managed nature zones exist in France, among which the nature reserves, the regional reserves and the national parks are the major elements. These networks also include forest zones that are subjected to conservation-management techniques. It would be highly worthwhile to coordinate the work carried out in all these networks and to share the scientific results. The same is true for the non-forest ecosystems found in forests and which constitute an important part of our natural heritage.

Particular attention must be paid to communication efforts. In the course of the work carried out in the year 2000, we were surprised by a number of “impassioned attitudes” concerning the RBI network.

It became clear that the network raised a number of sensitive issues and elicited resistance that is difficult to detect and to counter. We identified three main issues.

- Economic issues. RBIs created in operational zones “amputated” the forest by at least 50 to 100 hectares, which may represent a sizeable percentage of the zone managed by a forester. Areas considered negligible on the national level may be of some importance for a forest management unit.
- Political issues. The RBI network constitutes not only a “laboratory”, but also a showcase for the ONF. It is important that this policy be understood by the public, by a number of other partners (DIREN government agency, FRAPNA environmental protection group and the PNR regional nature parks, etc.) and by political decision makers.
- Human, i.e. psychological, issues. Certain ONF personnel came out decidedly in favour of the creation of the RBI network, others rejected the idea on a regional level. Among the requests made by personnel in the field, two arose very frequently. First, that hunting, an important and sensitive link between the ONF and the general public, remain possible. The second issue, of somewhat less importance to the personnel, concerned the continued access of the public to the RBI zones.

It is clear that discussions and planning with all the local parties are indispensable •

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