

1. INTRODUCTION

Nature conservation policies have been using the natural protected areas as the main instruments for the achievement of their goals. It has been recognised for years that such areas, envisaged as islands within the whole of the territory, serve no purpose unless the processes taking place outside their boundaries be taken into account. The contribution made by protected areas towards the conservation of the territory as a whole requires, therefore, a planning that must have an integrational character. This strategy does entail a greater degree of integration of the conservation policies into territorial planning by means of the development of systematic area structures and through a high degree of cooperation and coordination between institutions.

From the 1980s onwards, and specially following the enactment of the national Act for the Preservation of Nature in 1989, we have witnessed a thriving process in which a very large number of areas have been designated as protected ones. Nowadays we have more than seven hundred such areas in the whole of Spain, which amounts to roughly 8% of the territory. With the introduction of the NATURA 2000 Network, the territory to be set aside, with specific goals, for the preservation of Nature will reach 22% of the total.

The management experience gained over the last few decades makes it possible to assess the achievements as well as the existing restrictions. In spite of the strenuous efforts made by the appropriate governmental bodies with a view to providing legal, human and financial resources so that that the said management come about, we cannot as yet argue with specific data for the real effectiveness of the said management in conserving biological diversity. We know that the fragmentation of the territory, being, in the main, the result of the expansion of road and railway infrastructures, or that of the shift towards certain uses of the ground against different ones being linked with the rural character of the territory, is one of the most serious threats that the preservation of

biodiversity and the functional processes at landscape level has to face. It is our feeling, therefore, that all those initiatives aimed at lessening the impact of the effects of fragmentation shall be conducive to the achievement of the conservation goals.

Together with a growing experience in the planning and in the management of protected areas, we have over the last few years seen the development of landscape ecology as a science helping us to give formal expression to concepts useful for the devising of policies based upon a better knowledge of the ecological processes beneficial to the health of the ecosystems.

Moving from a conservation policy focused on natural protected areas as isolated units into a system concept, entails taking the whole of the territory into consideration. In other words, it is necessary to bear in mind the connectivity functions and the keeping of ecological processes, of interrelations and conflicts among ground uses. Such a concept means, in governmental terms, the coordination of sectorial policies.

It is in this context that this document has been prepared, whose main purpose it is to provide information relevant to the future devising of systems of natural protected areas. In order to reach that goal three aspects are being dealt with:

- Which are the main contributions made by landscape ecology to the devising of ecological networks, highlighting the importance of the processes of landscape fragmentation as the main threat to the continuous operation of the whole of the territory, and synthesising the scientific bases related to the connectivity of the territory.
- Which are the most relevant criteria to the devising of an ecological network, laying special emphasis on the indicators, based not only on the species and ecosystems but also on the structure of the landscape.
- Which actions have been taken in the last few years oriented towards the devising of ecological networks, within Spain as well as abroad.