Title: SUSTAINABLE FOREST MANAGEMENT AND PROTECTED AREAS IN SARDINIA (ITALY): THE ROLE OF THE REGIONAL FOREST AGENCY

Abstract
Forests and maquis of the Mediterranean basin are recognised as rich and biologically diverse systems. In Sardinia, one of the largest Mediterreanean islands, the regional protected-area network amounts to 690,227 ha, mainly covered by forests, woodlands, and maquis (66% of the total surface). A relevant portion of the protected areas are directly managed by the Regional Forest Agency (RFA) according to the strategies and priorities defined by the Regional Forest and Environmental Plan (RFEP), recently adopted by the Sardinian Government. The RFEP protected area management strategy is mainly based on the following points: i) sustainable forest management achieved by participatory multi-scale planning (i.e. regional, district and local level), ii) conservation and biodiversity improvement, iii) sustainable valorisation of ecosystem services, timber and non-timber forest products iv) development of alternative economic activities, and v) increased knowledge about natural resources and monitoring of forest dynamics This paper deals with the role of RFA in sustainable forest management for biodiversity conservation and local community development in protected areas in Sardinia. Forest conservation and biodiversity improvement are pursued by RFA with actions such as fire prevention and fighting, production and ex situ conservation of local varieties and ecotypes, preservation of ecosystems and habitats, conservation of landscape heterogeneity, increase of forest complexity (e.g. uneven aged and/or mixed forests with indigenous species), and reintroduction and monitoring of locally extinct or endangered animal species (Corsican Red Deer and Sardinian Trout). Some examples of the contribution of RFA to promote sustainable development of local communities are: (i) leader projects on non timber forest products, (ii) restoration of abandoned rural buildings to be given to local co-operatives for tourism-related activities, (iii) creation of a network of paths and facilities for excursionists, (iii) outsourcing thinning activities in coniferous plantations to local co-operatives. Different case-studies are also presented in detail and discussed, focusing on i) silvicultural best practices to improve biodiversity (at species and landscape level) ii) ecological restoration actions to mitigate land degradation processes due to unsustainable human pressure and iii) actions to promote sustainable use of forest resources and local development.

Title: Protection and conservation of the relic forest in Sardinia (Italy)

Authors: Puxeddu, Michele; Nudda, Graziano; Citterio, Giorgio; Giannini, Raffaello

Abstract
The human impact activity has determined a strongly alteration of the forest in Sardinia. At the present, in this Mediterranean island some forest can be considered a relic ancient woodlands. In these ecosystems the management must be directed to define the best strategies to obtaine high protection levels from ecological, historical, anthropological and land-scape point of view. In the genus Quercus among the species spread in the temperate regions Quercus pubescens is spontaneus in the Southern Europe up to Balkan Peninsula and in the Northern France. The Quercus pubescens was frequently classified by distinct Authors with different and personal principles in account of its variable morphological characters and its not clear systematic and distribution collocation. It shows a great polymorphism so the exact distribution on regional and national territory does not appear to be easily delimited. However, through a space/time analysis of the structural diversity, the statement of conservation of Quercus pubescens forest has been taken in consideration to describe some of the major example present in the central area of Sardinia (Gennargentu Mountains and Marghine-Goceano). Some cases are reported. Particular emphasis has been done for the Gennargentu forest as representative of relic and ancient forest with monumental single trees. In this area the distribution of stands were analized by GIS software and by multitemporal cartographic methods

(1977-1997-2005). Data about the stand structure are also reported. In the examined conditions, these aspects can be an effective support to define the conservation purposes. The preservation of the functionality is strictly related to the forest genetic pool which is the basis of biodiversity and the basis for adaptation and survival of species and individual. Keywords protection, genetic conservation, relic woods, Sardinia.