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BRIEF COMMUNICATION

Ecological Networks and Fluvial Corridors in Calabria (Southern Italy)

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The anthropic pressure on natural systems is the main cause for the present process of biodiversity loss in terrestrial biosphere [1]. Really, the human disturbance on Earth affects the 74.1% of terrestrial and marine habitats, including 22.4% completely modified, 51.7% partially disturbed and just the 25.9% in natural and pristine conditions [2]. At the beginning of third millenium, in the middle of a post-industrial era, named "Anthropocene" [3], mankind is causing the greatest mass extinction of wildlife in terrestrial biosphere [4-6]. One of the main troubles for biodiversity conservation on Earth is the process of ecosystem fragmentation caused by the growing human impact on natural resources [7-10]. So, an important role in the solution of the problem could be done by a process of environmental recovery for the conservation of the current levels of biodiversity balancing a better relationship between man and environment. In this debate, the key-word is "sustainability" through which the social and economic development can contribute altogether in the realization of a new kind of human growth where man and nature could thrive in a mutual relation. During the twentieth century, the main steps of environmental protection were directed to the appointment of protected areas designed as natural reserves where it could be possible to defend and improve biodiversity. Afterwards, this kind of dot-shaped vision appeared unsuited for an effective support of ecological processes [11]. In that roaring years, it was launched, by some american researchers, such as Soulé, Noss and Baier, an innovative project named "wildlands" promoting the new idea of a neural system between the protected areas all connected by the driving force of fluvial corridors, linking elements amongst vegetal and animal species [12]. Really, the first ecological networks arose from regional experiences conducted in the field, according to a pragmatic approach typical of any Anglo-American approach. The frame of this system was composed by core areas, buffer zones, stepping stones and ecological corridors, all connected in a complex structure. By this way, also in Italy it was realized the National Ecological Network (REN) established on 2000 year [13]. According to this national outlook, Calabria Region (Southern Italy), within the program of the Operative Regional Project (POR), processed on 2006 year the Supplementary Stategic Program (PIS) aimed to the realization of the Regional Ecological Network (RER – Calabria). The cornerstones of the net were located in the Sites of Communitary Interest (SIC) and in the Zones of Special Conservation (ZPS), actually known as Special Areas of Conservation (SAC) and Special Protected Areas (SPA). This new kind of of integrated approach recognizes in RER the main tool for a sound territorial planning so to connect highlands and coastal regions in the same environmental unit. So, it is hoped to establish an effective functional connectivity amongst protected areas through fluvial and ecological corridors along the regional catchments. Really, the calabrian region is characterized by a large hydrographic network composed by 1003 river basins of small, medium and big dimensions [14]. In particular, the fluvial corridors could be selected within the regional catchments with surface areas greater than 10 Kmq as it is shown in the figure 1. Therefore,

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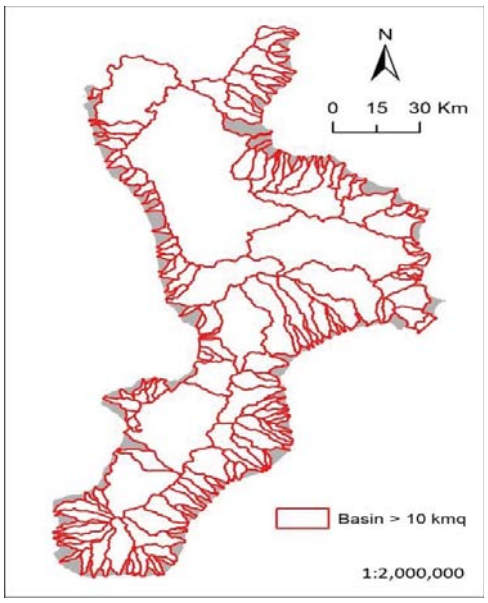

Figure 1 Map of the calabrian hydrographic network showing the basins with surface areas greater than 10 Km.

the protection of the regional environmental heritage must change from a kind of protection "dot by dot" to another one at "wide area" [15]. In conclusion, it could be possible a joint environmental management of the regional landscape through a Regional Ecological Network able to unit marine and terrestrial ecosystems within a complex network of fluvial corridors comparable to the widespread net of blood vessels of a human cardiovascular system where the protected areas of RER could be the heart pulsations of the network.

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