

BIODIVERSITY AND LANDSCAPE PROTECTION

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Abstract

Biodiversity and Landscape are different but closely related concepts and values. Biodiversity focuses on the variety of life forms, while Landscape considers the combination of natural and cultural elements that characterise a geographical area. Both are important for the conservation and a sustainable management of ecosystems and territories. The protection of Biodiversity and Landscape requires concrete and coordinated actions. For several years now Italia Nostra Sud Salento has been committed in actions, including legal ones, to protect Biodiversity, the Landscape, the socio-economic environment, the cultural, historical and artistic heritage in general, and the cultural identity of Salento in particular.

Keywords

Biodiversity and Landscape, Protection of Biodiversity and Landscape, Italia Nostra Sud Salento

1. *Biodiversity and Landscape*

Biodiversity and Landscape are different but closely related concepts and values.

Biodiversity focuses on the variety of life forms, while Landscape considers the combination of natural and cultural elements that characterise a geographical area.

Both are important for the conservation and a sustainable management of ecosystems and territories.

Biodiversity helps shape the Landscape through interactions between different species and natural elements. The Landscape, in turn, influences Biodiversity by providing different habitats for species.

Biodiversity is essential to maintaining healthy and resilient ecosystems within a Landscape. It contributes to ecosystem services such as oxygen production, water purification and climate regulation.

The Landscape can be managed in a way that protects and promotes Biodiversity. Landscape planning may include the creation of ecological corridors aimed at facilitating the movement of species.

Climate change, urbanisation and intensive farming practices can threaten the quality of both Biodiversity and Landscape. The loss of Biodiversity can lead to less resilient and less attractive landscapes.

Therefore, Biodiversity and Landscape are closely linked, and a sustainable management of both is crucial to maintaining balanced and resilient ecosystems.

Hence the need to protect both Biodiversity and the Landscape.

The term Biodiversity was introduced in 1988 by American entomologist Edward O. Wilson.

The UN Convention on Biological Diversity defines Biodiversity as the variety and variability of living organisms and the ecological systems in which they live, highlighting that it includes the diversity of species and ecosystem at genetic level.

Biodiversity is, therefore, the richness of life on Earth: plants, animals and microorganisms, the genes they contain, and the complex ecosystems they constitute in the biosphere. This variety does not only concern the form and structure of living beings, but also includes diversity understood as abundance, distribution and interaction between the different components of the system.

The diversity of life forms is the essence of Biodiversity, which encompasses the diversity of ecosystems within which different organisms live and evolve, the diversity of species and their frequency or rarity in a given territory, but also genetic diversity, i.e. the individual and overall genetic heritage of living organisms.

Ultimately, it can be said that Biodiversity represents the number, variety and variability of living organisms and how they may change from

one environment to another and over time. In other words, within ecosystems, living beings and physical and inorganic components coexist and interact with each other, influencing each other.

Biodiversity also encompasses human cultural diversity, which is affected by it, often negatively, despite the fact that Biodiversity, besides its intrinsic value, is fundamental as a source of goods, resources and services for humankind.

For example, plant Biodiversity, both in cultivated and wild plants, forms the basis of agriculture, enabling the production of food to feed the world's population and contributing to human health thanks to the active ingredients of certain medicines contained in plants and herbs. In addition, healthy and diverse ecosystems also contribute to air and water purification, climate regulation and flood prevention.

However, Biodiversity itself is increasingly compromised by practices such as deforestation and intensive monoculture farming, as well as phenomena that are always linked to human activities.

The same applies to animal Biodiversity, which is compromised by intensive farming.

Unfortunately, Biodiversity is being lost at an unprecedented rate, intensifying the pace of species extinction and compromising entire ecosystems, mainly due to habitat destruction, overexploitation of natural resources, excessive urbanisation, fires, climate change and the excessive use of herbicides and pesticides, which affects the survival of pollinating insects, essential for the reproduction of 70% of plants and the conservation of ecosystem Biodiversity.

In order to counteract this loss, in 1992 the international Community adopted the "Convention on Biological Diversity (CBD)".

The CBD has three main objectives: the conservation of Biodiversity on a global scale, the sustainable and durable use of its components, and the equitable distribution of the goods and services derived from it.

2. *Protection of Biodiversity and Landscape*

The protection of Biodiversity and the Landscape is essential to ensure the health of ecosystems and human well-being.

The protection of Biodiversity and the Landscape requires concrete and coordinated action at various levels.

Here are some important actions for protecting Biodiversity:

- Protection of natural habitats to ensure species survival: creation of protected areas such as national parks and nature reserves, and restoration of degraded ecosystems.
- Sustainable management of natural resources to avoid overexploitation: sustainable agricultural practices and responsible forest management.
- Species conservation: monitoring endangered species populations, controlling invasive species, captive breeding programmes and combating intensive fishing and farming.
- Reduction of pollution: control of emissions of pollutants into the atmosphere, water and soil, and proper waste management.
- Education and awareness raising: awareness campaigns on Biodiversity, environmental education in schools.
- Sustainable urban planning: designing green cities with green spaces and ecological corridors, limiting uncontrolled urbanisation.
- Research and monitoring: studies on Biodiversity and ecosystems, monitoring the impacts of climate change.
- International collaboration: international agreements for the protection of Biodiversity, exchange of knowledge and best practices between countries.

Such actions can be taken by governments, non-governmental organisations, local communities and individuals so as to contribute to the protection of Biodiversity.

In this regard, the European Union pursues policies on Nature and Biodiversity conservation with two fundamental directives: the "Birds Directive" (79/409/EEC) concerning the protection of wild birds, and the "Habitats Directive" (92/43/EEC) on the conservation of natural and semi-natural habitats and wild flora and fauna.

One of the specific objectives of the "Habitats Directive" is the creation of a coherent European ecological network, known as the "Natura 2000 Network", consisting of "Special Areas of Conservation (SACs)" and "Special Protection Areas (SPAs)".

Moreover, in Italy, the protection of the environment, Biodiversity and ecosystems has

become a constitutional principle with the integration of Articles 9 and 41 of the Constitution.

Article 9 of the Constitution not only protects the environment, Biodiversity and ecosystems, but also protects the Landscape and the historical and artistic heritage of the nation.

As mentioned above, the term “Landscape” can be defined as the combination and interaction of natural and cultural elements that characterise a geographical area, such as geomorphology, vegetation, architecture and human activities.

At national level, Landscape protection is regulated by specific laws and regulations, such as the “Code of Cultural Heritage and Landscape”, which covers land-use and urban planning, the protection of natural and cultural areas, the restoration and conservation of monuments and historical sites, as well as the promotion of sustainable and responsible tourism.

Here are some concrete and important actions for Landscape protection:

- Territorial and urban planning, in order to combine development needs with Landscape protection.
- Preservation and protection of cultural and historical landscapes that are important for safeguarding the cultural identity and historical memory of local communities.
- Restoration and conservation of monuments and historic sites.
- Promotion of sustainable and responsible tourism and sustainable economic development to ensure quality of life for local communities.
- Sustainable management of natural resources to maintain the beauty and functionality of the Landscape.
- Involvement of local communities in Landscape planning and management.
- Protection of natural and cultural heritage for future generations.
- Creation of protected areas, national parks and nature reserves to protect Biodiversity and the Landscape.

At the local level, there is the Territorial Landscape Plan for the Region of Apulia (PPTR).

It is a planning tool that aims to protect and enhance the landscape and territory of the Apulia region.

The PPTR of Apulia protects the natural and cultural elements that characterise the Apulian territory. It promotes sustainable development

and encourages economic and social activities that respect the environment and cultural heritage. It enhances the territory, identifying and promoting the resources and potential of the Apulia region.

Therefore, the PPTR of Apulia is important for preserving the cultural and historical identity of the region, promoting sustainable economic development, and ensuring quality of life for the Apulian citizens.

The PPTR of Apulia is a fundamental tool for the protection and enhancement of the Landscape and territory of the region.

Unfortunately, ten years after its adoption, the Plan is now undergoing a series of attacks at institutional level, aimed at reducing its constraints, especially those related to the coastal landscape, agriculture as well as renewable energy (Fiorella, 2024).

The recent proposal to amend the Coastal Plan reduces the protection of dune ridges, which are often invaded by cars as well as bathers, compromising both their structure, which is essential for protecting the marine environment and the land behind them, and the dune vegetation, which contributes to the accumulation of sand, and threatening the bird and reptile fauna.

This proposal removes the prohibition, provided for in Article 14 of the current law, on granting private individuals the management of dunes. Moreover, it fails to take into account the environmental importance of coastal habitats and EU protection obligations, while encouraging the private use of state property by allocating additional percentages to beach concessions.

The same applies to the protection of forests and, above all, coastal pine forests, which are invaded by motorists looking for parking near the sea, with the added danger of devastating fires.

Even for the agricultural Landscape, in the numerous proposals of regional housing legislation, – which have been repeatedly overturned by the Constitutional Court but always reiterated – there is an attempt to urbanise agricultural land, already depleted by Xylella, as well as by widespread illegal building.

It should be added that, at national level, the indiscriminate uprooting of olive trees that was previously subject to authorisation, is now permitted, even for healthy trees that are several hundred years old, leaving room for the indiscriminate invasion of photovoltaic systems. These systems, like all alternative energy plants, should be regulated, by identifying suitable sites

and also establishing energy communities, rather than left to the speculation of large international companies.

Still on the same subject, opposition has lately been raised to large anaerobic waste digestion plants for the production of biomethane, on the grounds that they are incompatible with the environmental, social and economic criteria that are essential for our territory.

In addition to the massive occupation of agricultural land, the projects would require a considerable influx of biomass of various kinds, not only agricultural but also livestock and agro-industrial. The biomasses should be sourced even outside our territory, in clear violation of the principles of the circular economy, which imply small plants that use local organic by-products to produce compost to fertilise the soil, not energy.

On the subject of attacks on Biodiversity and the Landscape, a tough battle, including legal action, is still underway against the project to expand the Porsche NTC test track in Nardò (Nardò Technical Centre - Porsche Engineering). The project involves a series of interventions that would destroy priority habitats in the Special Area of Conservation "Palude del Conte e Dune di Punta Prosciutto", located in the municipalities of Nardò and Porto Cesareo (Lecce, Italy). This is an area of significant environmental value which, as stated in NTC Porsche's own documents, is home to a priority habitat in the sub-steppe zone and the "Quercus ilex forests: holm oak woods" habitat, which "have almost completely disappeared in Salento. The very core of the holm oak/scrub mosaic within the Porsche property constitutes the last remnant of this habitat in Salento, together with other small pockets located in neighbouring areas".

It is clear that this is a particularly valuable ecosystem, with rare botanical species included in the "Red List" of important animal species and the presence of large areas of forest, scrubland, garrigue and steppe (Fiorella, 2024).

In this important and complex habitat, as reported in the "NTC" documentation, the project involves the uprooting of over 400,000 square metres of forest (40.5 hectares), over 1.5 million square metres (165.5 hectares) of other wooded areas and over 70,000 square metres (7.3 hectares) of steppe habitat, a priority species that cannot and must not be destroyed.

Fortunately, the project has now been withdrawn by NTC, for economic reasons and due

to strong opposition from environmental associations and the European Commission, much to the regret of members of the Regional Council, who wanted the plant at all costs.

Certainly worthy of protection is the "Landscape of Stones" with its dry stone walls, declared Intangible Cultural Heritage by UNESCO in 2018, with reference to practical and rural art (Fig. 1), and the small buildings which, in addition to being historical and cultural evidence of our rurality, (Fig. 2) also present a Biodiversity of plants and small animals that have adapted to a particularly arid environment. (Fig. 3).



Fig. 1: Dry stone wall (Wikipedia: Maksim)

Italia Nostra, through prestigious conferences and publications, continues to oppose the abandonment, degradation and devastation of this *habitat*, which should not be considered minor.

The defensive system of Salento is better known because it is more evident, consisting not only of large structures such as city walls and castles, but also coastal towers, tower houses and fortified farmhouses (Costantini, 2024). Unfortunately, the latter are often poorly renovated for use as resorts (Fig. 4).

In order to protect this historical, artistic and architectural heritage, which is often poorly preserved, Italia Nostra organises conferences and promotes studies and publications to encourage its proper restoration and use.

In conclusion, it must be remembered that humans are also part of Biodiversity and the Landscape.

Therefore, it is necessary to take an interest in human activities and works and their impact not only on the ecosystem but also on the complex



Fig. 2: Olive grove with “pagghiara” by Grandmother Lucia, Elisa and Sonia – San Luca area, Trepuzzi (LE). Photo V. Valzano, 1992



Fig. 3: Salento Biodiversity: Retrodunal Torre Chianca Porto Cesareo - Porto Badisco Grottoes (LE). Photo Virginia Valzano, 2009



Fig. 4: Masseria Ospina, Racale, photo F. Giannelli - Torre Colimena Manduria (TA), photo V. Valzano - Tower house in Uggiano La Chiesa and Masseria Carignano Nardò (LE), photo Antonio Costantini.

physical, social and economic environment in which we coexist with all living organisms.

For this reason, Italia Nostra is often wary of development projects, which often involve the disruption and distortion, for mere economic and speculative interests, of natural environments or artefacts that should be protected.

If it is true that habitats are subject to change and even degradation over time and due to human activity, it is everyone's responsibility to ensure that this common heritage is preserved, cared for and even restored so that it can continue to be used, provided that this is done in a culturally and scientifically correct manner, without distortion or speculation.

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