URBAN AND LANDSCAPE PERSPECTIVES

Roberto Gambino · Attilia Peano (Eds.)

Nature Policies and Landscape Policies

Towards an Alliance

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Aims and Scope

Urban and Landscape Perspectives is a series which aims at nurturing theoretic reflection on the city and the territory and working out and applying methods and techniques for improving our physical and social landscapes.

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With great affection we remember Attilia Peano – former Full Professor in Town and Regional Planning at the Politecnico di Torino (DIST) and CEN PPN Director – and the precious contributions she has given during the course of her life in the field of urban planning, landscape planning, and nature and cultural heritage conservation, being a protagonist in the debate on these topics at national and international level.
Her death (18th August 2013) interrupted her participation in several research activities which are still ongoing, and, in particular, in the international research, that has been carried on by the CED PPN since 2010, concerning the relationship between Landscape policies and Nature Conservation policies.
This book is the outcome of this CED PPN research, and we would like to dedicate it to our friend and colleague Attilia, hoping in this way to remember her passion and her valuable guide in facing the subject here presented.

Roberto, Gabriella, Emma, Luigi

Foreword

Since the beginning of the 1990s, the European Documentation Centre on Nature Park Planning (CED PPN, DIST, Politecnico and Università di Torino) has conducted ongoing research into nature and heritage conservation policies and their relationship with urban and regional planning. Particular attention has been given both to European parks and other protected area[1] policies and to European landscape[2] policies.

In 2008, CED PPN launched an innovative research programme concerning the *connections* between nature conservation policies and landscape policies. This is a major subject since the risks related to global change and the continuous worsening of environmental conditions challenge the effectiveness of area-based nature conservation policies, demanding that they be 'territorialized', thereby overcoming the traditional separation of protected areas with respect to the wider context. This demand is at the basis of the so-called new conservation paradigm (5th IUCN World Parks Congress, Durban 2003). Landscape, as a bridge between nature and culture, could play a crucial role in this direction, helping conservation policies to open up to the territorial, social and economic context, extending their scope and improving their effectiveness. Protected areas, in turn, could act as extraordinary learning laboratories for landscape policies, giving them the regulatory capacity generally gained over the course of a long history of policies and planning. Since 2008, this research programme has been discussed at several international meetings such as the 4th IUCN World Conservation Congress (Barcelona 2008) and the 5th IUCN World Conservation Congress (Jeju 2012).

[1] "A protected area is a clearly-defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values" (Dudley, N., Ed., 2008. Guidelines for Applying Protected Area Management Categories. Gland, Switzerland, p. 8).

[2] Landscape means "an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors" (Council of Europe, European Landscape Convention, 2000, art. 1).

In the context of this activity, in 2010 CED PPN, in order to take stock of considerations, research and experiences at the international level in relation to the above-mentioned theme, invited a wide group of experts in different disciplines (architects, planners, geographers, biologists, ecologists, historians, jurists, economists, sociologists) from various institutional bodies (universities, administrative authorities, international organisations such as IUCN, EUROPARC, UNESCO, UNISCAPE and others) to participate in a 'research book' project. The experts were asked to deal, starting from their disciplinary background, with the main research thesis – concerning the possibility and opportunity of an alliance between nature conservation policies and landscape policies – and with its political, social, scientific and cultural implications. The idea behind the project was not to draw up a comprehensive, unified proposal on the issue to be subsequently published and discussed but rather to start – on the basis of a book – a process of dialogue stimulating the critical enrichment of existing knowledge on the matter and inspiring further debate.

The most interesting considerations gathered since 2010 are presented in this book, which is a 'research book' in the true sense in that it collects and makes it possible to compare a set of varied contributions on the subject, highlighting agreements and convergences as well as disagreements and divergences about the proposed nature-landscape alliance.

The contributions, after an introduction (Gambino) which presents an overall line of reasoning, are divided into three main parts.

Part I – New Paradigms. In this first part, some general and theoretical considerations about the current and potential relationships between nature conservation policies and landscape policies are reported. Experts discuss the new cultural paradigms that might form the basis of the envisaged alliance. This topic is approached with reference to

- Diverse geographical contexts: the global context (Phillips, Brown, with reference to some international tools such as IUCN Category V, Protected Landscapes), the European context (Ritchie, starting from the EUROPARC Federation experience), the US context (Bray, with reference to the role of a large landscape conservation approach in protected area policies)
- Diverse disciplinary backgrounds such as ecology (Gibellli and Santolini, who analyse the role of ecological functionality for landscape conservation; Guarino et al., who deal with the conflicts between human activities and ecosystem conservation), law (Desideri, who focuses on the legal framework for a comprehensive approach to nature conservation and landscape protection), architecture (Buyck and Vales, who analyse the concept of landscape, also in relation to its design), geography (Raffestin, who explores the role of landscape image in understanding territorial reality)

Part II – From Nature to Landscape and Back. In this second part of the book, experts discuss the mutual interactions between nature policies and landscape policies, focusing on three main topics: (i) regulations and institutional frameworks, (ii) policies, (iii) actions and tools.

With reference to *regulations and institutional frameworks* (i), the book gathers contributions concerning different geographical contexts: the global context (Andrian and Tufano, with reference to the relationship between Biosphere Reserves and protected areas), the European context (Angelini, with specific reference to the Alpine Convention; Romano and Zullo, who focus on the relationship between protected areas, EU Natura 2000 sites and landscapes) and some specific national contexts (such as the Netherlands and the United Kingdom in Voghera or Italy in Moschini and in Besio).

As far as *policies* (ii) are concerned, contributions deal with

- Policies concerning specific landscape types (the urban landscape in La Riccia), particular territorial or institutional contexts (the Andalucian vegas and delta areas in Miguel and Perèz Campaña, the Switzerland institutional system in Hammer and Leng), protected area types (the IUCN category V protected areas – Protected Landscapes – in Salizzoni)
- Policies concerning wider issues such as the strategic role of tourism in protected areas (Danelutti et al., Coda Zabetta), governance processes and community participation for nature conservation (Weizlbaumer et al., Barbera et al., Salvatore, Brunetta), the 'sense of limit' in landscape planning and design (Mazzino), biodiversity policies for landscape conservation (Ferroni et al., Seardo), the concept of protected areas as 'nodes' of networks extended beyond their boundaries (Pigliacelli and Teofili), the role of cooperation policies for landscape management (Nicoletti)

With reference to *actions and tools* (iii), experts present and discuss methodologies and instruments concerning landscape planning and nature conservation in their relationship (Paolinelli, Castelnovi, Sargolini, Tosini, Dudley and Stolton, Laven et al.), also focusing on specific aspects such as visual perception analysis of landscape (Franchini and Greco), management and planning of landscape scenic values (Cassatella) and cultural heritage enhancement (Beltramo). This section also includes contributions on environmental and landscape assessment (Bravi and Gasca, Bottero et al.) and on financing of nature conservation policies (Cetara).

Part III – Experiences and practices. In the third part of the book, a number of case studies, mainly regarding protected areas or special landscape and institutional contexts, are presented. They provide interesting examples of the integration of aspects and policies related both to nature and landscape (Godone et al., Vinardi, Deambrogio and Zocco, Balletti and Soppa, Ghersi, Corsani and Morelli, Martinelli and Simone, Pinzello, Matoda). Some of the case studies allow also to discuss specific issues such as the relationship between energy production and nature-landscape conservation (Natali and Silvestri, Mininni and Rizzi) or the connection between tourism and nature-landscape conservation (Calcagno Maniglio and Simone, Valle and Dongiovanni).

As a 'research book', this publication does not set out to exhaust the topic of the relationship between nature conservation policies and landscape policies. Rather, it aims at opening up some lines of enquiry into the matter, orienting research efforts

towards new possible directions. These lines of enquiry should take stock of the following ‘lessons’ learned from the various contributions, concerning

- The dynamic dimension of current problems related to the joint conservation of nature and landscape and consequently the need to always look to the future
- The strategic role of the diversification and integration of knowledge, visions and competences on the matter, adopting a multi-, inter- and trans disciplinary approach
- The need for trans-scale approaches (global, national, regional and local) in planning and managing nature and cultural heritage
- The crucial role played by the ‘project’ for a ‘good governance’ of the regional realities and thus the importance of identifying the values, aims, tools and, most importantly, actors to be involved in this challenge

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CED PPN
European Documentation Centre
on Nature Park Planning

CED PPN (European Documentation Centre on Nature Park Planning) Interuniversity Department of Regional and Urban Studies and Planning (DIST), Politecnico and Università di Torino. www.cedppn.polito.it

Roberto Gambino

Abbreviations

AECID	(Spanish) Agency for International Cooperation and Development
ANCSA	Associazione Nazionale Centri Storici e Artistici/Italian National Association of Historic and Artistic Centres
ANPIL	Aree Naturali Protette di Interesse Locale/Natural Protected Areas of Local Interest
APE	Apennines Park of Europe
APIs	Areas of Particular Importance for biodiversity and ecosystem services
BRs	Biosphere Reserves
CA	Conjoint Analysis methodology
CAP	Common Agricultural Policy of the European Union
CBA	Cost-Benefit Analysis
CBD	Convention on Biological Diversity
CCAs	Community Conserved Areas
CDCULT	Steering Committee for Culture (Council of Europe)
CDPATEP	Steering Committee for Cultural Heritage and Landscape (Council of Europe)
CE	Choice Experiments
CED PPN	European Documentation Centre on Natural Park Planning (DIST, Politecnico di Torino)
CEV	Corporate Ecosystem Valuation (WBCSD)
CITIES	Convention on International Trade in Endangered Species of Wild Fauna and Flora (1973)
CLLD	Community-Led Local Development (ENRD)
CMS	Convention on the Conservation of Migratory Species of Wild Animals (or Bonn Convention 1979)

CIVILSCAPE	Non-governmental Organizations for European Landscape Convention
CNR-IRPI	Italian National Research Council, Research Institute for Geo-hydrological Protection of Turin
CoE	Council of Europe
CoM	Covenant of Mayors (EU)
COMPACT	Community Management of Protected Areas for Conservation program
COP	Conference of the Parties
COPI	Cost of Policy Inaction
CVM	Contingent Valuation Method
ECC	European Economic Community
ECTS	European Charter for Sustainable Ecotourism
EEA	European Environment Agency
EESC	European Economic and Social Committee (EU)
EGTC	European Grouping of Territorial Cooperation
EIA	Environmental Impact Assessment
ELC	European Landscape Convention
ENELC	European Network of Local and Regional Authorities for the Implementation of the European Landscape Convention
EPA	Enlarged Partial Agreement on Cultural Routes (Council of Europe 2010)
EPE	Environmental Protection Expenditure
ESPON	European Spatial Planning Observation Network (EU)
ESs	Ecosystem Services
EUAP	Elenco Ufficiale delle Aree Protette/Official list of Italian Protected Areas
EC	European Commission
EU	European Union
EUROSTAT	Statistical Office of European Union
FAI	Fondo Ambiente Italiano/Italian Environment Fund
GIS	Geographic Information System
GYE	Greater Yellowstone Ecosystem
HABAP	English Highway Agency (Biodiversity Action Plan)
HLF	Heritage Lottery Fund
HPM	Hedonic Pricing Method
IALE	Italian Society of Landscape Ecology
ICCAs	Indigenous peoples' and Community Conserved Areas and territories
ICOMOS	International Council on Monuments and Sites
IGMI	Istituto Geografico Militare Italiano/Italian Military Geographic Institute
ILNM	Federal Inventory of Landscapes and Natural Monuments of National Importance

INU	Istituto Nazionale di Urbanistica/Italian National Institute of Urban Planners
IPA	Indigenous Protected Area (Australia)
IPAL	Integrated Programme on Arid Lands of UNEP
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
ISOS	Federal Inventory of Swiss Heritage Sites
ISPRA	Istituto Superiore per la protezione e la ricerca ambientale/ Institute for Environmental Protection and Research (Italy)
IUCN	International Union for Conservation of Nature
IUCN-Med	IUCN Centre for Mediterranean
LCA	Landscape Character Assessment
LC	Landscape Capacity
LCC	Landscape Conservation Cooperative
LVIA	Landscape and Visual Impact Assessment
MaB	Man and Biosphere UNESCO Program
MAP	Madrid Action Plan
MEA	Millennium Ecosystem Assessment (2005)
MATTM	Italian Ministry for Environment and Territory and Sea
MiBAC	Italian Ministry on Cultural Heritage and Activities
NE	Natural England
NIAs	Nature Improvement Areas
NCAs	National Character Areas
NGO	Non-governmental Organization
NHA	National Heritage Area
NIAs	Nature Improvement Areas
NBSAPs	National Biodiversity and Action Plans
OECD	Organization for Economic Cooperation and Development
OEP	Arco Latino, Osservatorio del Paesaggio/Arco Latino European Landscape Observatory
PA/PAs	Protected Area/Protected Areas
PES	Payments for Ecosystem Services
PIT	Piano di Indirizzo Territoriale/Regional Design Plan
PEBLDS	Pan-European Biological and Landscape Diversity Strategy
PEER	Partnership for European Environmental Research (EU)
PoWPA	Programme of Work on Protected Areas (CBD)
PPGIS	Public Participation Geographic Information Systems
PPR	Piano Paesaggistico Regionale/Regional Landscape Plan
PPTR	Piano Paesaggistico Territoriale Regionale/Regional Territorial Landscape Plan (Apulia Region)
PSR	Piano di Sviluppo Rurale/Rural Development Plan
PTCP	Piano di Coordinamento Provinciale/Province Coordination Plan
SCBD	Secretariat of the Convention on Biological Diversity
SCIs	Sites of Community Importance

SCZs	Special Conservation Zones
SEA	Strategic Environmental Assessment
SEAP	Sustainable Energy Action Plan
SNB	National Strategy for Biodiversity
SPAs	Special Protection Areas
SUME	Sustainable Urban Metabolism for Europe project
TEEB	The Economics of Ecosystems and Biodiversity
TCM	Travel Cost Method
UN	United Nations
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples (2008)
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNISCAPE	European Network of Universities for the Implementation of European Landscape Convention
UNWTO	United Nations World Tourism Organization
USNPS	U.S. National Park Service
VC	Venture Capital
WBCSD	World Business Council for Sustainable Development
WCPA	IUCN World Commission on Protected Areas
WDPA	World Database Protected Areas
WHS	World Heritage Sites
WNBR	World Network of Biosphere Reserves
WWF	World Wide Fund for Nature
ZNIEFF	Zone naturelle d'intérêt écologique, faunistique et floristique/ Inventory of natural zones of ecological, faun and floristic interest
ZPPAUP	Zone de Protection du Patrimoine Architectural, Urbain et Paysager/Zone of Protection for Architectural, Urban and Landscape Patrimony

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Chapter 13
Protected Areas, Natura 2000 Sites and Landscape: Divergent Policies on Converging Values

Bernardino Romano and Francesco Zullo

Abstract The identification of Natura 2000 sites in Italy has led to a significant change in the geography of environmental protection, by profoundly strengthening the role of ecological and naturalistic values in a country where the collective culture is traditionally more prepared to understand cultural values. In general, the identification of Natura 2000 Sites, carried out according to the guidelines established by Directive 92/43/EEC, was based on a more scientific and less politically "negotiated" process compared to the one followed for the determination of protected areas, by selecting habitats of community interest and not landscape or historical and cultural values. It seems very clear that these are two different types of areas with partially overlapping values that require forms of territorial planning and governance that optimize multiple conservation goals: while Nature 2000 sites protect habitats, protected areas extend their function to cultural landscapes, historical heritage and traditions. The Ecological Network should be a decisive model to classify values and integrate rules, avoiding excessively specialized approaches and applying instead the typical techniques of preservation biology and connectivity conservation, together with routine urban and infrastructure planning techniques.

Keywords Ecological network • Nature 2000 • Landscape urbanization • Protected areas

13.1 Natural Areas: The National Framework

The establishment of Natura 2000 sites in Italy has led to a significant change in the geography of environmental protection, by profoundly strengthening the role of ecological and naturalistic values in a country where the collective culture is

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traditionally more prepared to understand cultural values. Since 1995, year in which the "Bioitaly" programme cofinanced by the European Commission within the framework of LIFE Nature 1994 was implemented, the Italian regions, aided by various naturalistic groups, have identified almost 2,600 sites among SCIs (Sites of Community Interest) and SPAs (Special Protection Areas). SCIs alone, covering 4,530,400 ha, account for almost 15 % of the national territory (Calvario 2010; Maiorano et al. 2007).

Today, terrestrial protected areas (PAs) set up at national and regional levels amount to 3,163,590 ha (Ministry of the Environment 2010), but only 42 % of SCIs is included in PAs. These figures convey the idea of the geographical pervasiveness of the Natura 2000 programme, which has protected slightly less than 2,600,000 ha, in addition to park territories, almost doubling the Italian natural areas that were already protected.

The union of Natura 2000 sites (SPAs + SCIs), covering just less than 60,000 km^2, accounts for as much as 19 % of the national territory. Although high, this figure ranks Italy only in tenth in the EU of 27 behind countries, such as Bulgaria and Slovenia (with over 34 %) or Greece and Estonia with over one fourth of their respective territories identified as Natura 2000 sites (Natura 2000). However, it is also true that in terms of absolute value of Natura 2000 areas, Italy is preceded only by France, Poland and Estonia, and, in any case, our country is part of the group of six (France, Sweden, Germany, Italy, Poland and Estonia) with over 50,000 km^2 of established Natura 2000 sites (Table 13.1). This aspect is clear evidence of the fact that although Italy is broadly affected by severe phenomena, such as environmental degradation, uncontrolled urbanization (on average in excess of 7.5 % today) and ecosystem fragmentation, it still retains a significant expanse of natural habitats as evidenced by comparisons at European level (Mücher et al. 2009). And this is with a population density (203 inhabitants/km^2) that is lower only to that of Germany (228 inhabitants/km^2), but significantly higher than that of the other four countries considered (Poland 123 inhabitants/km^2, France 102, Estonia 28 and Sweden 20).

Besides their geographical expanse, PAs and Natura 2000 sites are marked by two very different approaches in terms of criteria and identification methods, as evidenced by their not uniform distribution in the country.

In general, the identification of Natura 2000 sites, carried out according to the guidelines established by Directive 92/43/EEC (Habitat), was based on a more scientific and less politically "negotiated" process compared to the one followed for the determination of Pas (Alphandéry and Fortier 2001), by selecting ecosystem values only (habitats of community interest) and not landscape or historical and cultural values. As a result, the study of their relationship with PAs in terms of size and geography provides important information on the efficiency of the environmental protection policy pursued in Italy until the end of the 1990s. This policy has perhaps focused too much on more aesthetical and cultural values, rather than purely naturalistic ones. Table 13.2 shows the two types of protected areas, PAs and Natura 2000 sites, and their distribution in Italian regions.

Table 13.1 National surfaces involved in the Natura 2000 programme in Europe updated to 2010 (Source: http://ec.europa.eu/environment/nature/natura2000/db_gis/)

Country	National surface (km^2)	Nature 2000 terrestrial area (km^2)	Natura 2000 national rate (%)
United Kingdom	244,820	17,683.22	0.07
Denmark	43,093	3,849.09	0.09
Latvia	64,589	7,304.53	0.11
Lithuania	65,301	7,879.07	0.12
France	549,192	68,789.94	0.13
Belgium	30,528	3,870.04	0.13
Malta	316	40.93	0.13
Ireland	70,280	9,122.4	0.13
Sweden	414,864	57124.04	0.14
Netherlands	41,526	5,724.52	0.14
Czech Republic	78,866	11,072.12	0.14
Finland	338,145	48,757.52	0.14
Austria	83,859	12,324.19	0.15
Germany	357,031	55,060.92	0.15
Spain	45,226	8,036.87	0.18
Romania	238,391	42,653.97	0.18
Luxembourg	2,597	471.34	0.18
Italy	301,333	57,736.45	0.19
Poland	312,685	60,781.74	0.19
Portugal	91,990	19,202.45	0.21
Hungary	93,030	19,938.72	0.21
Greece	131,940	35,804	0.27
Estonia	504,782	137,316.84	0.27
Cyprus	5,736	1,627.35	0.28
Slovakia	48,845	14,141.07	0.29
Bulgaria	110,910	37,634.08	0.34
Slovenia	20,273	7,202.98	0.36
Total EU	**4,290,148**	**751,150.39**	**0.18**

PAs exceed one quarter of the total area only in two regions (Campania and the Abruzzi), while the same threshold referred to Natura 2000 sites is exceeded in Liguria, Valle d'Aosta and once again Campania.

A significant aspect is the greater homogeneous geographical density of the two types of areas in the various regions. In fact, the standard deviation compared to the median value calculated in the columns of the regional area rates is 0.74 for PAs and 0.46 for Natura 2000 sites: this suggests an objective and more regular distribution of habitats of value which the park policy has been unable to seize, as it has been greatly conditioned by the local sensibility of regional governments.

Table 13.2 Distribution of PAs and Natura 2000 sites (SCIs) per region (Source: author's elaboration on data of Italian Ministry of Environment Decree 27 April 2010)

		Protected areas		Nature 2000 (SCIs)	
Regions	Regional area (ha)	Area (ha)	Regional area rate (%)	Area (ha)	Regional area rate (%)
Abruzzi	1,082,699	318,352	0.29	252,587	0.23
Basilicata	1,007,280	196,181	0.19	59,114	0.06
Calabria	1,522,338	270,248	0.18	85,976	0.06
Campania	1,360,917	349,251	0.26	363,275	0.27
Emilia-Romagna	2,218,437	93,781	0.04	226,481	0.10
Friuli-Venezia Giulia	785,993	52,624	0.07	132,170	0.17
Lazio	1,722,149	225,086	0.13	143,107	0.08
Liguria	540,595	28,056	0.05	145,428	0.27
Lombardia	2,386,119	149,646	0.06	224,201	0.09
Marche	974,954	88,293	0.09	102,608	0.11
Molise	446,103	6,265	0.01	97,750	0.22
Piedmont	2,538,879	179,717	0.07	282,345	0.11
Puglia	1,953,386	249,308	0.13	465,518	0.24
Sardinia	2,392,008	84,341	0.04	426,251	0.18
Sicily	2,555,398	259,841	0.10	384,065	0.15
Tuscany	2,268,096	127,604	0.06	286,839	0.13
Trentino-Alto Adige	1,360,077	268,017	0.20	301,525	0.22
Umbria	846,108	63,039	0.07	109,667	0.13
Valle d'Aosta	326,093	43,425	0.13	71,619	0.22
Veneto	1,842,400	110,516	0.06	369,866	0.20
Total and average	**30,130,029**	**3,163,591**	**0.10**	**4,530,392**	**0.15**

A clear example of this can be found in 15 regions, including Lombardy, Trentino-Alto Adige and Piedmont, where the density of Natura 2000 sites is higher than that of PAs, in some cases with huge differences: in Valle d'Aosta, Veneto, Friuli, Liguria, Emilia-Romagna, Tuscany and Umbria, the Natura 2000 rates are much higher than double those of PAs, but in Sardinia this value is fourfold higher, while in Molise it is 20-fold higher.

Only in five central and southern regions, where large national parks are found, is this ratio reversed, with Natura 2000 density that is lower than PA density: this is the case of Lazio, Campania, Abruzzi, Basilicata and Calabria, with PAs covering almost fourfold Natura 2000 sites in the latter region.

It is also worth mentioning that, despite broad local variations, national parks on average coincide with SCIs for less than half (48 %) of their expanse (Fig. 13.1).

This analysis once again confirms that the policies on protected areas pursued over the past 50 years have not been able to select the more purely eco-biological

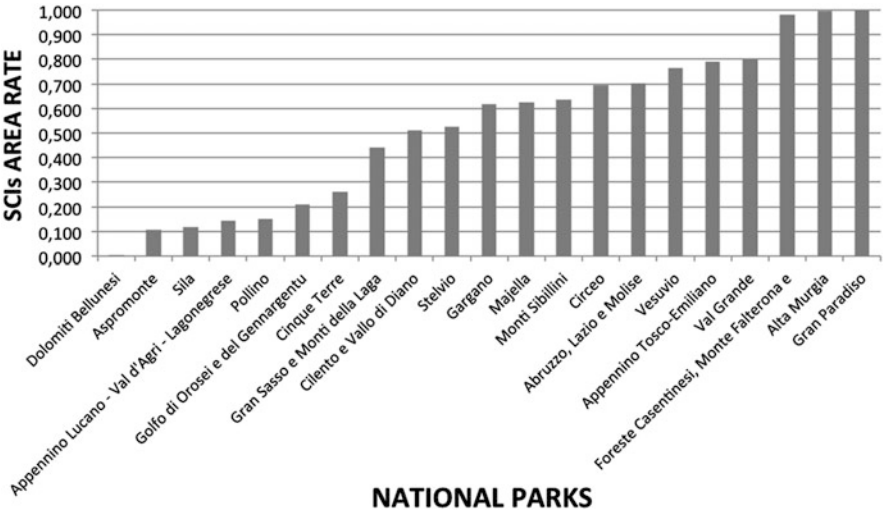

Fig. 13.1 Percentage of SCIs over the overall surface of Italian National Parks (Source: author's elaboration on data of Italian Ministry of Environment Decree 27 April 2010)

aspects of natural environments, but have favoured the greater political and collective sensitivity towards historical and landscape values. On the other hand, Italy, where one of the first laws in the world on the aesthetical value of landscapes was enacted (Law no. 1497 of 1939) has only recently developed a culture capable of fully understanding the ecosystem-related importance of the territory (Settis 2010).

13.2 Landscape Conservation Effects

The foregoing statement is also confirmed by the results in Fig. 13.1 showing incidence rates of PAs and Natura 2000 sites in the different types of landscapes listed by ISPRA in 2004.

PAs have protected most (over 50 %) of the different environmental categories (some volcanic formations, plateau landscapes in mountain areas and the dolomites landscape) but have greatly neglected some systems which the Natura 2000 programme focused on later. In fact, in the case of small islands, wetlands, carbonatic hills, volcanic mountains, granitic hills and lavic flats, the protection provided by Natura 2000 sites covers areas that are eight- to tenfold greater than those considered as PAs.

It may be said that Natura 2000 sites generally protect all Italian landscapes more, with the exception of intermountain basins and plateau landscapes in mountain areas. However, in the latter historical human activities have generally been far more intensive than in adjacent areas and the historical and visual values are normally by far greater than eco-biological ones.

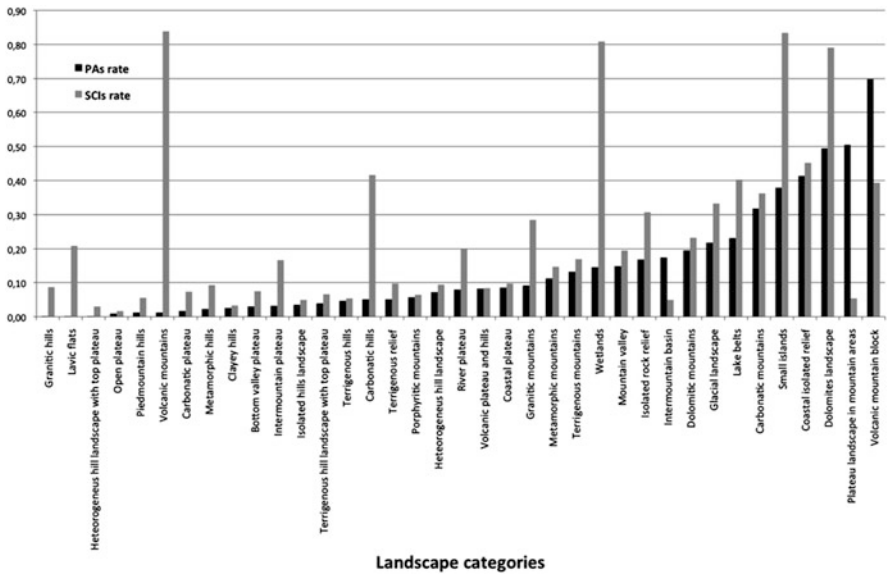

Fig. 13.2 Diagram showing the rate of incidence of the different types of landscapes in PAs and Natura 2000 sites

One aspect that PAs and Natura 2000 sites share is that they both are concentrated massively in medium-high altitudes, thus evidencing that the country's remaining naturalistic areas are found in these morphologically more marginal areas. Italian PAs include over 30 % of belts ranging between 1,000 and 1,800 m above sea-level, but even Natura 2000 sites cover 25 % of these strips. The greater ability of the Natura 2000 programme to seize environmental importance is once again evidenced in the plain and hill belts ranging between sea level and 600 m in altitude. In these areas, Natura 2000 sites, accounting for 42 % coverage, exert a greater pressure than PAs that do not exceed 35 % (Fig. 13.2).

As a result of these morphological features, PAs and Natura 2000 sites are scarcely affected by urbanization. At present, in PAs mean urbanization density is less than 1 % (9‰), and in SCI sites it is essentially similar. However, in the latter case, the most significant aspects concern urban transformation in the surrounding areas (Fig. 13.3): considering a buffer of 1 km in width around the sites, in the 1950s urbanization density in these areas was 2.7 %, but since 2000 it has risen to over 14 % (Romano and Zullo 2012a). Although the habitats within Natura 2000 sites have not been altered physically, urbanization causes border disturbances and above all severe consequences in terms of fragmentation between the same habitats, thus reducing or nullifying the potentialities of the ecological network, which the Natura 2000 programme aimed to set up.

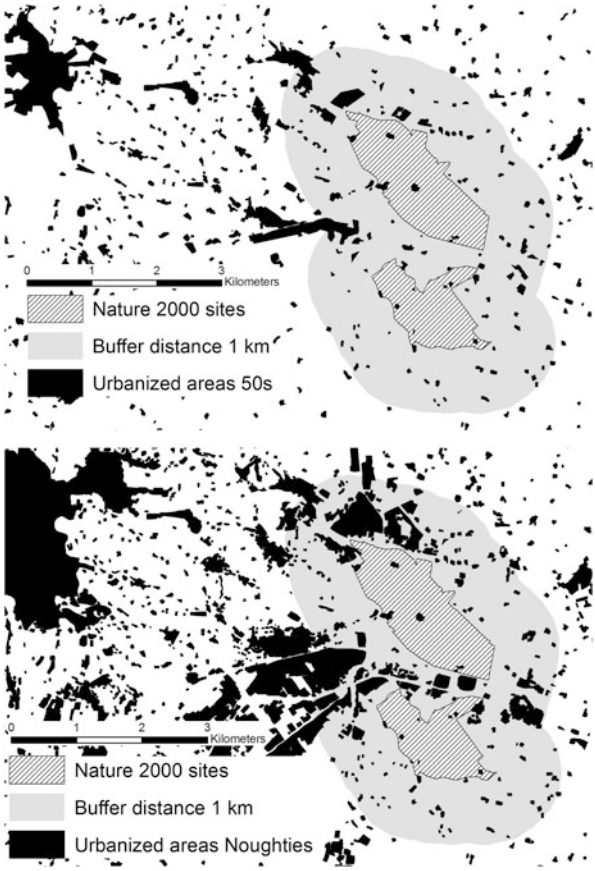

Fig. 13.3 Example of development of urbanized areas in buffer strips of 1 km in width of two Natura 2000 sites (Ansa degli Ornari, IT5210025, and Boschi a farnetto di Collestrada, IT5210077), highlighting that, although newly built-up areas have not affected the inner parts of the sites, they have however isolated and fragmented interstitial areas (Source: authors' elaboration)

13.3 Models for Converging Environmental Policies

In the past 20 years, the introduction of the principles to select habitats of Community interest in the Italian environmental culture has led to forms of political, technical and management disorientations in the traditional approach to conservation. One cause has certainly been the underlying misunderstandings inherent in the Natura 2000 programme itself: pursuing the goal of the European Ecological network through a "set" of isolated areas. In fact, in the planning and management stages, the Natura 2000 sites were often handled as normal protected areas, even if characterized by prevailing ecosystem-related attributes compared to other categories of values.

The same management plans have essentially been unable to have an impact on the changes affecting the surrounding territorial matrices, exactly as has been the case of the plans for conventional protected areas. Given the situation, we can certainly assert that the Natura 2000 programme has offered an important

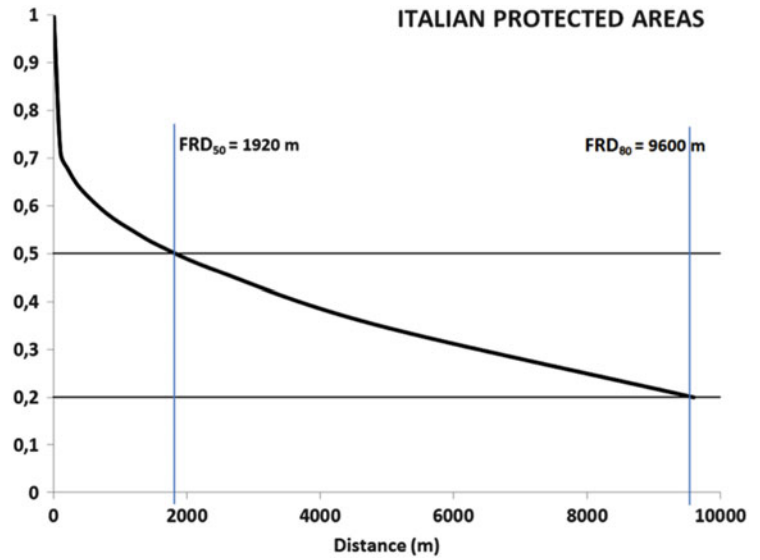

Fig. 13.4 Fragmentation reduction curve and FRD indices for the Italian system of protected areas (Source: authors' elaboration)

contribution to the geographical increment in natural areas to be protected, by significantly supplementing the yet patchy action undertaken through parks and reserves. As mentioned earlier, the various forms of protected areas have almost been doubled, with over six million hectares of PAs + SCIs union.

In this respect, indirectly, the situation of national ecological connectivity has surely improved: a recent study (Romano and Zullo 2012b) shows that the mean distance to be bridged in Italy to reduce fragmentation between PAs by 50 % is of almost 2 km (Fig. 13.4), while this same index applied to the union of PAs and Natura 2000 sites drops to a few hundred metres (566 m). The reduction of these distances between core areas and stepping stones has certainly improved the function of the actual ecological network for some land species, of great importance too from the standpoint of preservation (such as large mammals). However, this system (the Ecological Network) is not recognized formally in Italy, nor legally defined or planned, excluding only two regional cases: Umbria and Lombardy.

On the other hand, the improved efficiency in the preservation of biodiversity achieved through the geographical integration of protected areas is running the risk of being weakened: the creation of Natura 2000 sites seems to have deflated the role of protected areas, even in the eyes of the public opinion. It is most likely a coincidence, due to the economic crisis, that Italian parks are suffering huge cuts in resources over the past years. On the contrary, the Natura 2000 sites are able to draw on various European funds (e.g., ROP-ERDF or LIFE), albeit to a varying extent from region to region, and are expected to attract additional funds once converted into SCZs (Special Conservation Zones) and subjected to PAF (Prioritized Action Frame), as established by the same Habitat Directive.

Based on the above, it seems very clear that these are two different types of areas with partially overlapping values that require forms of territorial planning and governance that optimize multiple conservation goals: while Natura 2000 sites protect habitats, protected areas extend their function to cultural landscapes, historical heritage and traditions.

The planning tools used in these areas and in the territories that contain and link them are numerous: park plans, management plans for Natura 2000 sites, regional landscape plans and municipal land use plans. Only recently, albeit in the absence of a specific systematic national law, have some spontaneous attempts been made to pool the goals or at any rate to avoid contradictions between the various rules pursuing, in part, the same and, in part, different goals (conservation of biodiversity and habitats, retention of historical landscapes and enhancement of cultural heritage).

According to the opinions of many, the Ecological Network should be a decisive model to classify values and integrate rules, avoiding excessively specialized approaches and applying instead the typical techniques of preservation biology and connectivity conservation, together with routine urban and infrastructure planning techniques (Gambino and Romano 2004). This message is having some difficulties in making its way into routine territorial governance policies, although many signs suggest that over the next decade, there could be a significant shift in this direction in Italian culture.

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