



**PERIODIC REVIEW
FOR BIOSPHERE RESERVES**

(January 2002)



The UNESCO General Conference, at its 28th session, adopted Resolution 28 C/2.4 on the *Statutory Framework of the World Network of Biosphere Reserves*. This text defines in particular the *criteria for an area to be qualified for designation as a biosphere reserve* (Article 4). In addition, Article 9 foresees a periodic review every ten years, *based on a report prepared by the concerned authority, on the basis of the criteria of Article 4 and forwarded to the secretariat by the State concerned*. The text of the Statutory Framework is given in the annex.

The form which follows is proposed to help States to prepare their national reports in accordance with Article 9 and to update the data available to the Secretariat on the biosphere reserves concerned. This report should enable the International Coordinating Council (ICC) of the MAB Programme to review how each biosphere reserve is fulfilling the criteria of Article 4 of the Statutory Framework and in particular the three functions. It should be noted that it is requested, in the last part of the form (*Conclusion*), to indicate the way in which the biosphere reserves fulfil each of these criteria.

It is advisable to quantify data as much as possible and to provide supporting documentation to complete the information provided, especially:

- a map clearly showing the zonation;
- the legal texts for the different zones.

The completed form should be sent to:

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I. NAME OF THE BIOSPHERE RESERVE

CILENTO AND VALLO DI DIANO

II. COUNTRY

ITALY

III. PHYSICAL CHARACTERISTICS OF THE BIOSPHERE RESERVE

Latitude and longitude

40°20'N; 15°20'E

vedi allegato 1

Biogeographical Region

Indicate the name usually given to the biogeographical region in which the biosphere reserve is situated.

MEDITERRANEAN REGION

Topography of the region

Briefly describe the major topographic features (wetlands, marshes, mountain ranges, dunes, landscapes, etc.).

This biosphere reserve is located in south-central Italy, bordering the Tyrrhenian Sea. It is characterized by low dolomite mountains with typical karst features such as sinkholes and caves. The coastline is made up of cliffs, bays and sandy beaches, with sea caves and freshwater springs. The Mediterranean sclerophyll vegetation is divided into many habitats according to altitude, ranging from dry coastal garrigue, to Holm oak woodlands, mixed forests of oak, hornbeam, and alder, natural stands of European beech, to high-altitude grasslands. The fauna is noted for its birds, notably birds of prey. Marine environment is characterized by wide seagrass beds, that form an almost continuous strip all along the coasts, and by coralligenous bioconstructions with a very high biodiversity

Climate

Briefly describe the climate of the area using one of the common climate classifications.

The climate is warm temperate with warm and very drought summers . Rainfall and temperature are typically Mediterranean, with a maximum of rainfall in autumn-winter and minimum in summer.

<i>Biosphere Reserve of Cilento and Vallo di Diano</i>	
Name of survey station	Capo Palinuro
Lat. Long.	40°01'17"N 15°16'44"E
Altitude	185 m s.l.
Mean annual temperature	22° C
Average temperature of the warmest month	29° C
Average temperature of the coldest month	7° C
Mean annual precipitation	730 mm

Geology, geomorphology, soils

Briefly describe the main land formations and characteristics.

We can find a pelagic succession, heavily tectonised, largely outcropped in the coastal area (e.g. Ascea) and in the more incised valleys (e.g. Mingardo River Valley), referable to a former Mesozoic ocean. The same succession, near to the south-eastern border of the Parks, shows its substratum: upper Jurassic ophiolites. Remnants of these rocks are also placed in one of the olistostrome of the Parks (i.e. Centaurino M.). In the framework of southern Apennines, Mesozoic limestone and dolomite have a great importance as diffusion and thickness. Also in Cilento and Vallo di Diano National Parks some of the most elevated mountain (e.g. Alburni Mts., Cervati Mts., etc.) are built up by shallow marine carbonatic successions (more than 3000 m in thickness). These latter correspond to carbonatic platform deposits, like the present Bahamas Isles, scatter in the margin of African plate at least up to the end of Cretaceous. On the previous domains, already deformed, a thrust-top basin was developed in the upper Miocene, as witness the turbiditic successions, impressive for exposition and variety (e.g. Stella M. and Gelbison M.) . In fact, several kind of turbiditic deposits are represented, in order to recognize an architecture of the deposition in the basin and also to define the factors controlling its development. At last, a regional uplift affected the chain in the Plio-Pleistocene time, as revealed some marine deposits raised up to 400 m or some fluvio-karstic gorges, and also the climate changed several times. So the glacial episodes and the sea-level rise left traces respectively on the mountain (i.e. glacial cirque and moraine) and along the coast (i.e. sea notches, caves, etc.).

Significance for conservation of biological diversity: habitats and characteristic species

List main habitat types (e.g. humid tropical forest, savanna woodland, alpine tundra, coral reef, seagrass beds) and land cover (e.g. residential areas, agricultural land, grazing land).

Type of habitat:

Cilento is a node of primary importance. Just about to mention the presence of 28 SCIs (Sites of Community Importance), two of which are marine according to the European Commission Habitats Directive (92/43/ECC) and 8 Special Protection Areas (SPAs), according to the European Commission Birds Directive (2009/147/ECC).

IDENTIFICATION CODE	NAME	SURFACE (Ha)
SIC-IT8050019	Lago Cessuta e Dintorni	546
SIC-IT8050025	Monte della Stella	1179
SIC-IT8050024	Monte Cervati, Centaurino e Montagne di Laurino	27898
SIC-IT8050030	Monte Sacro e Dintorni	9634
SIC-IT8050033	Monti Alburni	23621
SIC-IT8050028	Monte Motola	4690
SIC-IT8050006	Balze di Teggiano	1201
SIC-IT8050007	Basso Corso del Fiume Bussento	414
SIC-IT8050032	Monte Tresino e Dintorni	1339
SIC-IT8050026	Monte Licosa e Dintorni	1096
SIC-IT8050036	Parco Marino di S.Maria di Castellabate	5014
SIC-IT8050017	Isola di Licosa	5
SIC-IT8050042	Stazione a Genista Cilentana di Ascea	5
SIC-IT8050016	Grotta di Morigerati	3
SIC-IT8050008	Capo Palinuro	156
SIC-IT8050002	Alta Valle del Fiume Calore Lucano (Salernitano)	4668
SIC-IT8050013	Fiume Mingardo	1638
SIC-IT8050001	Alta Valle del Fiume Bussento	625
SIC-IT8050011	Fasce interne di Costa degli Infreschi e della Masseta	701
SIC-IT8050040	Rupi Costiere della Costa degli Infreschi e della Masseta	273
SIC-IT8050038	Pareti Rocciose di Cala del Cefalo	38
SIC-IT8050039	Pineta di Sant'Iconio	358
SIC-IT8050041	Scoglio del Mingardo e Spiaggia di Cala del Cefalo	71
SIC-IT8050037	Parco Marino di Punta degli Infreschi	4914
SIC-IT8050034	Monti della Maddalena	8511
SIC-IT8050022	Montagne di Casalbuono	17123
SIC-IT8050049	Fiumi Tanagro e Sele	3677
SIC-IT8050023	Monte Bulgheria	2400
SIC-IT8050010	Fasce Litoranee a Destra e a Sinistra del Fiume Sele	630

SIC-IT8050050	Monte Sottano	212
SIC-IT8050012	Fiume Alento	3024
SIC-IT8050031	Monte Soprano e Monte Vesole	5674

IDENTIFICATION CODE	NAME	SURFACE (Ha)
ZPS-IT8050055	Alburni	25367
ZPS-IT8050046	Monte Cervati e Dintorni	36912
ZPS-IT8050048	Costa tra Punta Tresino e le Ripe Rosse	2841
ZPS-IT8050047	Costa tra Marina di Camerota e Policastro Bussentino	3276
ZPS-IT8050008	Capo Palinuro	156
ZPS-IT8050021	Medio Corso del Fiume Sele-Persano	1515
ZPS-IT8050053	Monti Soprano, Vesole e Gole del Fiume Calore Salernitano	5974
ZPS-IT8050037	Parco marino di Punta degli Infreschi	4914
ZPS-IT8050036	Parco marino di S.Maria di Castellabate	5019

Furthermore, the presence of endemic species and whole habitats belonging to the presence of Mediterranean and temperate Biocore are of the Cilento one area of biological and morphological interest around the Mediterranean basin.

1. Coastal and Halophytic Habitat
2. Sea Dunes of the Mediterranean coast
3. Freshwater Habitat
4. Sclerophyllous scrub (MATORRAL)
5. Natural and semi-natural grassland formation
6. Rocky habitats and caves
7. *Posidonia oceanica* seagrass bed
8. Forests

Coastal and Halophytic Habitat	Regional or local distribution	<p>This habitat is potentially present on all sandy and low coast, along the south carbonatic coast of the park from Scario to Palinuro and in Torre del Telegrafo in Ascea.</p> <p>Biogenic reefs of the “coralligenous of platform” strongly characterize coastal bottoms at depth of more than 40 m, especially in the area of Punta Licoso (Marine Protected Area of Santa Maria di Castellabate)</p>
	Characteristic species and associations	<p>Annual vegetation of drift lines (<i>The dominant species is the annual plant Cakile maritima, thogheter with other plants such as Salsola kali, Eryngium maritimum.</i>)</p> <p>Vegetated sea cliffs of the Mediterranean coasts with endemic Limonium spp.</p> <p>In the northern part of the park, on the sea rocks of Torre del Telegrafo in Ascea, the vegetation of the Crithmo-Limonietea is present as community of Crithmum maritimum e Lotus cytisoides while the Limonium remotispiculum is absent.</p> <p>Rocky marine habitats or biological concretions that rise from the seabed. Two main types of reef can be recognised: those where animal and plant communities develop on rock or stable boulders and cobbles, and those where structure is created by the animals themselves (biogenic reefs).</p>
Sea Dunes of the Mediterranean coast	Regional or local distribution	<p>Embryonic shifting dunes</p> <p>Formations of the coast representing the first stages of dune construction, constituted by ripples or raised sand surfaces of the upper beach or by a seaward fringe at the foot of the tall dunes.</p> <p>It can be found mainly along the sand beach of Cala del Cefalo in Marina di Camerota, but also as small fragments in Marina di Ascea and Ogliaastro Marina.</p> <p>Coastal dunes with Juniperus spp.</p> <p>Juniper formations: Mediterranean and thermo-Atlantic coastal dune slacks and slopes, formations of calcareous dunes. This habitat that nowadays is present only on the dunal system of Cala del Cefalo</p> <p>Cisto-Lavenduletalia dune sclerophyllous scrubs</p> <p>Humid regions. This habitat is present only as small fragments togheter with scrubland with Myrtus communis and Pistacia lentiscus as in Torre dei Caprioli (Palinuro)</p>
	Characteristic species and associations	<p>Embryonic shifting dunes</p> <p>Formations of the coast representing the first stages of dune construction, constituted by ripples or raised sand surfaces of the upper beach or by a seaward fringe at the foot of the tall dunes. The perennial psammophilic grass Elytrigia juncea plays the mains role for sand colonization, while Ammophila arenaria is rare.</p> <p>Coastal dunes with Juniperus spp.</p>

		<p>Juniper formations: Mediterranean and thermo-Atlantic coastal dune slacks and slopes, formations of calcareous dunes. This habitat type includes the communities of Juniperusturbinata ssp. turbinata, Juniperus macrocarpa ecc.</p> <p>Cisto-Lavenduletalia dune sclerophyllous scrubs Sclerophyllous or lauriphyllous scrubs established on dunes of the Mediterranean and Warm-Temperate Humid regions. Includes also Sclerophyllous or lauriphyllous scrubs on dunes of Pistacio-Rhamnetalia e Cisto-Micromerietea.</p>
Freshwater Habitat	<i>Regional or local distribution</i>	<p>Constantly flowing Mediterranean rivers with Glaucium flavum This habitat is located along the river basins Lambro, Mingardo Bussento and Alento.</p> <p>Constantly flowing Mediterranean rivers with Paspalo-Agrostidion species This habitat is present only as point formations on some silty and clay deposits of the rivers Bussento, Mingardo and Alento.</p> <p>Petrifying springs with tufa formation (Cratoneurion) In the Park this habitat has been found only in two places: the river Bussento and Castelvita Caves.</p>
	<i>Characteristic species and associations</i>	<p>Constantly flowing Mediterranean rivers with Glaucium flavum Communities colonising gravel deposits of rivers with a Mediterranean, summer-low, flow regime, with formations of the Glaucion flavi. This is pioneer vegetation that colonizes the recent fluvial deposits left by the floods that are more or less stabilized. The most common vegetal community is the scrubland with Inula and Helichrysum . These are environments with high level of naturalness and high botanical diversity.</p> <p>Constantly flowing Mediterranean rivers with Paspalo-Agrostidion species Nitrophilous annual and perennial grass and sedge formations of the alluvial banks of large Mediterranean rivers, with Paspalum paspaloides, P. vaginatum, Polypogon viridis, Cyperus fuscus, and hanging curtains of Salix ssp. and Populus alba.</p> <p>Petrifying springs with tufa formation (Cratoneurion) Hard water springs with active formation of travertine or tufa. These formations are found in such diverse environments as forests or open countryside. They are generally small (point or linear formations) and dominated by bryophytes</p>
Natural and semi-natural grassland formation	<i>Regional or local distribution</i>	<p>Rupicolous calcareous or basophilic grasslands of the Alysso-Sedion albi These grasslands are distributed on hills and</p>

		<p>mountains of Alburni and Cervati overlooking the Diano Valley.</p> <p>Pseudo-steppe with grasses and annuals of the Thero-Brachypodieta</p> <p>They are secondary grasslands maintained thanks to the grazing and fire and are distributed on the carbonatic mountainides of Valicorvo, San Michele and Pannello in Caselle in Pittari.</p>
	<i>Characteristic species and associations</i>	<p>Rupicolous calcareous or basophilic grasslands of the Alyso-Sedion albi</p> <p>Open xerothermophile pioneer communities on superficial calcareous or base-rich soils (basic volcanic substrates), dominated by annuals and succulents of the Alyso-Sedion Oberdorfer & Müller in Müller 61.</p> <p>These discontinuous grasslands are characterized by the presence of Alyssum alyssoides ssp. Orientale Other plants are Dasypirum villosum, Bromus erectus Dactylis glomerata, Phleum ambiguum, Avena barbata, Stipa pennata, Briza maxima, Aegilops geniculata, Euphorbia spinosa e Thymus longicaulis. They are secondary grasslands maintained thanks to the grazing and are present on carbonatic and rocky soils.</p> <p>Pseudo-steppe with grasses and annuals of the Thero-Brachypodieta</p> <p>Meso- and thermo-Mediterranean xerophile, mostly open, short-grass annual grasslands rich in therophytes; therophyte communities of oligotrophic soils on baserich, often calcareous substrates.</p> <p>These therophytic grasslands are dominated by Brachypodium ramosum with other annual herbs and grassessuch as Bromus erectus, Phleum ambiguum, Aegilops geniculata Galium corrudifolium, Convolvulus cantabrica.</p>
Rocky habitats and caves	<i>Regional or local distribution</i>	<p>Western Mediterranean and thermophilous scree</p> <p>This habitat is presents in the Park as coenosis of Achatherum calamagrostis on the scree and debris northeast side of Monte Bulgheria in San Giovanni a Piro.</p> <p>Calcareous rocky slopes with chasmophytic vegetation</p> <p>This habitat is located on the top of Alburni and Cervati Mountains., and on the topo of Monte Sacro</p> <p>Submerged or partially submerged sea caves Caves. They are numerous, especially along the calcareous coasts of the southern part of Cilento (AMP of Costa degli Infreschi e della Masseta) and are important sites for touristic diving.</p>
	<i>Characteristic species and associations</i>	<p>Western Mediterranean and thermophilous scree</p> <p>Screes of warm exposures in the Alps and the Pyrenees, of calcareous substrates in the Pyrenees, of Mediterranean mountains, hills and lowlands and, locally, of warm, sunny middle European upland r lowland sites.</p>

		<p>Sub-types : Central Mediterranean screes; screes of the Italian peninsula and of the large Mediterranean islands.</p> <p>Calcareous rocky slopes with chasmophytic vegetation Vegetation of fissures of limestone cliffs, in the mediterranean region and in the eurosiberian plain to apine levels, belonging essentially to the Potentilletalia caulescentis,Aslpenietalia glandulosi rders. Two levels may be identified: a) thermo- and meso-Mediterranean; b) montane and oro- editerranean. This habitat type presents a great regional diversity, with many endemic plant species.</p> <p>This habitat includes the coenosis of coastal cliffs with Dianthus rupicola, Primula palinuri,Iberis semperflorens, the coenosis of inland cliffswith Portenschlagiella ramosissima, Campanula fragilis etc, and the coenosis of inland cliffs on the top of Alburni and Cervati Mountains. The chasmophytic vegetation on the topo of Monte Sacro is characterized by the endemic Minuartia moraldoi.</p> <p>Submerged or partially submerged sea caves Caves vary in size, from only a few metres to more extensive systems, which may extend hundreds of meters into the rock. There may be tunnels or caverns with one or more entrances, in which vertical and overhanging rock faces provide the principal marine habitat. Sea cave communities vary considerably depending on the structure and extent of the cave system, their degree of submergence and of exposure to sand scour and wave-surge, and their geology. Caves are typically colonised by encrusting animal species but may also support shade-tolerant seaweeds near their entrances. Physical conditions, such as inclination, wave surge, scour and shade, change rapidly from cave entrance to the inner parts of a cave, and this often leads to a marked gradation in the communities present.</p>
Posidonia oceanica seagrass bed	<i>Regional or local distribution</i>	<p>Posidonia beds</p> <p>Posidonia beds form an almost continuous strip all along the Cilento coasts, providing a suitable habitat for selective artisanal fishing.</p>
	<i>Characteristic species and associations</i>	<p>Posidonia beds</p> <p>Posidonia oceanica is an endemic species to the Mediterranean Sea that forms dense and extensive green meadows whose leaves can attain 1 meter in height. They require transparent, nutrient-poor waters and sediments devoid of labile organic matter. These underwater meadows provide important ecological functions and services and harbour a highly diverse community, with some species of economic interest.</p>
Forests	<i>Regional or local distribution</i>	<p>Apennine beech forests with Taxus e Ilex Thermophilous beech forests. This habitat</p>

		<p>is the most common beech forest in the Park, mainly presents on the Alburni, Cervati and Gelbison Mountains</p> <p>Apennine beech forests with <i>Abies alba</i> Beech forests of the hill level. Nowday they are only two small nuclei: one on Monte Motola and the other one on Alburni Mountains.</p> <p><i>Salix alba</i> and <i>Populus alba</i> galleries Riparian forests of the Mediterranean basin dominated by <i>Salix alba</i>, <i>S. fragilis</i> or their relatives (44.141). Mediterranean and Central Eurasian multi-layered riverine forests.</p> <p><i>Platanus orientalis</i> and <i>Liquidambar orientalis</i> woods (<i>Plantanion orientalis</i>) Small riparian forests with <i>Platanus orientalis</i> can be found in the Park only along the river Palistro. This is probably the most northerly population of <i>Platanus orientalis</i> in Italy.</p> <p><i>Quercus suber</i> forests The larger nuclei are present in the vicinity of Centola and between Caselle in Pittari and Morigerati.</p> <p>Mediterranean pine forests with endemic Mesogean pines The largest population can be observed on flysch rocks of Punta Licosa in Castellabate and Ripe Rosse in Montecorice. Probably, these forests were originated by Byzantine monks that moved in South Italy during the Middle Ages.</p>
	<p><i>Characteristic species and associations</i></p>	<p>Apennine beech forests with <i>Taxus e Ilex</i> Thermophilous beech forests, highly fragmented and harbouring many endemics, with <i>Taxus baccata</i> and <i>Ilex aquifolium</i>. <i>Ilex aquifolium</i> is quite common in this type of beech, while <i>Taxus baccata</i> is quite rare, but a beech with many <i>Taxus baccata</i> is present near Monte Alburno.</p> <p>Apennine beech forests with <i>Abies alba</i> Beech forests of the hill level, on cold sites, highly fragmented and harbouring many endemics, with <i>Abies alba</i>. Once the beech forest with <i>Abies alba</i> were much common in the park. Other trees that can be found in this type of beech forest are <i>Ostrya carpinifolia</i>, <i>Acer lobelii</i> and <i>Acer obtusatum</i>.</p> <p><i>Salix alba</i> and <i>Populus alba</i> galleries Riparian forests of the Mediterranean basin dominated by <i>Salix alba</i>, <i>S. fragilis</i> or their relatives (44.141). Mediterranean and Central Eurasian multi-layered riverine forests with <i>Salix</i> spp., <i>Populus</i> spp., <i>Alnus</i> spp., <i>Juglans</i>, <i>Tamarix</i>.. Tall poplars. These riparian forests are often fragmented and are in contact with agricultural or</p>

		<p>residential areas. So they are rare and very fragile and the few ones still intact can be found only in inaccessible areas. The hygrophilous tree species that characterize these forests are <i>Alnus glutinosa</i>, <i>Salix alba</i>, <i>Populus nigra</i>, <i>Populus alba</i>, <i>Juglans regia</i>, <i>Ulmus minor</i> and <i>Alnus cordata</i></p> <p><i>Platanus orientalis</i> and <i>Liquidambar orientalis</i> woods (<i>Plantanion orientalis</i>) Forests and woods, for the most part riparian, dominated by <i>Platanus orientalis</i> (oriental plane) or <i>Liquidambar orientalis</i> (sweet gum), belonging to the <i>Plantanion orientalis</i> alliance.</p> <p>Quercus suber forests West-Mediterranean silicicolous forests dominated by <i>Quercus suber</i>. These forests are very rare. Occasionally these forests <i>Quercus suber</i> is associated with <i>Quercus ilex</i> and <i>Quercus pubescens</i>. The shrub layer is very thick, and consists mainly of <i>Erica arborea</i>, <i>Myrtus communis</i>, <i>Pistacia lentiscus</i>, <i>Phyllirea latifolia</i>, <i>Cistus monspeliensis</i>.</p> <p>Mediterranean pine forests with endemic Mesogean pines Peninsular Italian Aleppo pine forests <i>Pinus halepensis</i> formations of the Italian peninsula; extensive, probably at least partially native ones are individualised in the subdivisions below. In the Park these pine forests are spread mainly on rocky coasts.</p>
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Main species:

ANIMALS

Mammals

Canis lupus

Capreolus capreolus italicus

Clethrionomys glareolus

Eliomys quercinus

Erinaceus europaeus

Felis silvestris

Lepus corsicanus

Lutra lutra

Mustela putorius

Myotis blythii

Myotis capaccinii

Myotis myotis

Myotis nattereri

Neomys fodiens

Pipistrellus kuhlii

Rhinolophus euryale

Martes martes

Microtus arvalis

Microtus savii

Muscardinus avellanarius

Mustela nivalis

Tursiops truncatus

Birds

Acrocephalus melanopogon

Alauda arvensis

Alcedo atthis

Alectoris graeca orlandoi

Aquila chrysaetos

Ardea purpurea

Ardeola rallide

Calandrella brachydactyla

Caprimulgus europaeus

Charadrius alexandrinus

Chlidonias niger

Ciconia ciconia

Ciconia nigra

Circaetus gallicus

Circus aeruginosus

Circus cyaneus

Circus macrourus

Circus pygargus

Coracias garrulus

Coturnix coturnix

Dendrocopos medius

Dryocopus martius

Egretta garzetta

Falco biarmicus

Falco eleonora

Rhinolophus ferrumequinum

Rhinolophus hipposideros

Rhinolophus mehelyi

Sorex samniticus

Talpa romana

Falco columbarius

Falco naumanni

Falco peregrinus

Falco vespertinus

Ficedula albicollis

Gelochelidon nilotica

Grus grus

Himantopus himantopus

Lanius collurio

Lanius minor

Larus audouini

Lullula arborea

Milvus migrans

Milvus milvus

Nycticorax nycticorax

Pandion haliaetus

Pernis apivorus

Pluvialis apricaria

Pyrrhocorax pyrrhocorax

Recurvirostra avosetta

Scolopax rusticola

Sterna albifrons

Sternula sandvicensis

Sylvia undata

Turdus philomelos

Amphibian

Bombina pachypus

Hyla intermedia

Lissotriton italicus

Rana dalmatina

Rana italica

Salamandra salamandra

Salamandrina terdigitata

Triturus carnifex

Reptiles

Coronella austriaca

Elaphe quatorlineata

Natrix natrix

Podarcis muralis

Vipera aspis

Caretta caretta

Fish

Alburnus albidus

Alosa fallax

Anguilla anguilla

Barbus plebejus

Blennius fluviatilis

Lampetra planeri

Leuciscus souffia muticellus

Rutilus rubilio

Salmo trutta

Coryphaena hippurus

Dentex dentex

Diplodus sargus

Epinephelus aeneus

Epinephelus alexandrinus

Epinephelus caninus

Epinephelus marginatus

Sciaena umbra

Seriola dumerili

Arthropods

Aclemmysa solarii

Argynnis niobe

Austropotamobius italicus

Callimorpha quadripunctata

Calopteryx haemorrhoidalis

Carcharodus lavatherae

Coenagrion caerulescens

Coenagrion mercuriale

Cerambyx cerdo

Lucanus cervus

Lucanus tetraodon

Lycaena alciphron

Kyklioacalles solarii

Melanarge arge

Melitaea trivia

Nymphalis polychloros

Osmoderma eremita

Otiorhynchus aequus

Cucujus cinnaberinus
Euphydryas aurinia
Gerandryus aetnensis
Heterocerus aragonicus
Hydraena assimilis
Hipparchia fagi
Hipparchia statilinus
Iolana iolas
Isotomus barbarae
Leiopus femoratus
Palinurus elephas
Scyllarides latus
Maja squinado

Oxygastra curtisii
Phengaris arion
Polyommatus dorylas
Prinobius myardi
Prionychus ater
Polydrusus brevicollis
Polydrusu raverai
Rosalia alpina
Saga pedo
Thymelicus acteon
Homarus gammarus
Scyllarus arctus
Percnon gibbesi

Molluscs

Acanthinula aculeata
Cecilioides acicula
Carychium tridentatum
Deroceras reticulatum
Helicodonta obvolvata
Hygromia cinctella
Limacus flavus

Punctum pygmaeum
Rupestrella philippii
Siciliaria paestana
Tandonia sowerbyi
Truncatellina callicratis
Testacella scutulium
Vitrea subrimata

<i>Pomatias elegans</i>	<i>Lithophaga lithophaga</i>
<i>Pinna nobilis</i>	<i>Pinna rudis</i>
<i>Spondylus gaederopus</i>	<i>Dendropoma petraeum</i>
<i>Charonia lampas</i>	<i>Tonna galea</i>

PLANTS

Vascular plants

Acer lobelii Ten.

Limodorum abortivum (L.) Swartz

Aceras anthropophorum (L.) R.Br.

Limonium remotispiculum (Lacaita)
Pignatti

Achillea mucronulata (Bertol.) Sch.Bip. *Linaria purpurea* (L.) Mill.
Achillea tenorii Grande *Listera ovata* (L.) R. Br.
Ajuga tenorei C.Presl *Micromeria graeca* L. subsp. *tenuifolia*
(Ten.) Nyman
Androsace villosa L. *Minuartia moraldoi* F. Conti
Arabis rosea DC. *Myosotis ambigens* (Bég.) Grau
Arenaria bertolonii Fiori *Neotinea maculata* (Desf.) Stearn
Armeria macropoda Boiss. *Neottia nidus-avis* (L.) .
Armeria majellensis Boiss. subsp. *Ononis oligophylla* Ten.
ausonia Bianchini
Asperula calabra (Fiori) Ehrend. & *Ophrys apifera* Huds.
Krendl
Astragalus pelecinus (L.) *Ophrys bombyliflora* Link
Aubrieta columnae Guss. subsp. *Ophrys crabronifera* Mauri subsp.
columnae *sundermannii* (Soó) Del Prete
Avenula praetutiana (Parl.) Pign. *Ophrys fuciflora* (F.W.Schimdt) Moench
subsp. *fuciflora*
Barlia robertiana (Loisel.) Greuter *Ophrys fusca* Link subsp. *fusca*
Bellis margaritaeifolia Huter, Porta & *Ophrys incubacea* Bianca ex Tod.
Rigo
Berberis aetnensis C.Presl *Ophrys sphegodes* Mill. subsp. *sphegodes*
Botrychium matricariifolium (Döll) *Ophrys tenthredinifera* Willd.
A.Braun
Bromus caprinus A.Kern. *Orchis coriophora* L.
Bunium petraeum Ten. *Orchis italica* Poir.
Campanula fragilis Cirillo subsp. *Orchis lactea* Poir.
cavolinii (Ten.) Damboldt
Campanula fragilis Cirillo subsp. *Orchis laxiflora* Lam.
fragilis
Campanula pollinensis Podlech *Orchis pallens* L.
Campanula pseudostenocodon Lacaíta *Orchis pauciflora* Ten.
Campanula trichocalycina Ten. *Orchis provincialis* Balb.

<i>Cardamine monteluccii</i> Brilli-Catt. & Gubellini	<i>Orchis quadripunctata</i> Cirillo
<i>Carduus affinis</i> Guss.	<i>Orchis simia</i> Lam.
<i>Carum heldreichii</i> Boiss.	<i>Ornithogalum exscapum</i> Ten. subsp. exscapum
<i>Centaurea cineraria</i> L. subsp. cineraria	<i>Pedicularis elegans</i> Ten.
<i>Centaurea nigrescens</i> Willd. subsp. neapolitana (Boiss.) Dostál	<i>Platanthera bifolia</i> (L.) Rchb.
<i>Cephalanthera damasonium</i> (Mill.)	<i>Platanthera chlorantha</i> (Custer) Rchb.
<i>Cephalanthera longifolia</i> (L.) Fritsch	<i>Posidonia oceanica</i> (L.) Delile
<i>Cephalanthera rubra</i> (L.) Rich.	<i>Potentilla rigoana</i> Wolf
<i>Cerastium granulatum</i> (Huter, Porta & Rigo) Chiov.	<i>Primula palinuri</i> Petagna
<i>Cerastium tomentosum</i> L.	<i>Pulmonaria apennina</i> Cristof. & Puppi
<i>Chaerophyllum hirsutum</i> L. subsp. magellense (Ten.) Pignatti	<i>Ranunculus apenninus</i> (Chiov.) Pignatti
<i>Cirsium lobelii</i> Ten.	<i>Ranunculus fontanus</i> C.Presl
<i>Cirsium tenoreanum</i> Petr.	<i>Ranunculus pollinensis</i> (N.Terracc.) Chiov.
<i>Coeloglossum viride</i> (L.) Hartm.	<i>Rhinanthus wettsteinii</i> (Sterneck) Soó
<i>Cotoneaster nebrodensis</i> (Guss.) Koch	<i>Sanguisorba minor</i> Scop.
<i>Crepis lacera</i> Ten.	<i>Saxifraga exarata</i> Vill. subsp. ampullacea (Ten.) D.A.Webb
<i>Crocus imperati</i> Ten.	<i>Saxifraga porophylla</i> Bertol.
<i>Crocus suaveolens</i> Bertol.	<i>Scabiosa holosericea</i> Bertol.
<i>Cyclamen hederifolium</i> Aiton	<i>Scabiosa uniseta</i> Savi
<i>Cyclamen repandum</i> Sm.	<i>Sedum magellense</i> Ten. subsp. magellense
<i>Cynoglossum magellense</i> Ten.	<i>Senecio nemorensis</i> L. subsp. stebianus (Lacaita) Pignatti
<i>Dianthus carthusianorum</i> L. subsp. tenorei (Lacaita) Pignatti	<i>Serapias cordigera</i> L.

<i>Dianthus ferrugineus</i> Mill.	<i>Serapias lingua</i> L.
<i>Dianthus rupicola</i> Biv. subsp. <i>rupicola</i>	<i>Serapias parviflora</i> Parl.
<i>Digitalis micrantha</i> Roth	<i>Serapias vomeracea</i> (Burm. f.) Briq.
<i>Echinops siculus</i> Strobl	<i>Serratula cichoracea</i> (L.) DC. subsp. <i>cichoracea</i>
<i>Epipactis helleborine</i> (L.) Crantz	<i>Sesleria nitida</i> Ten.
<i>Epipactis leptochila</i> (Godfery) Godfery	<i>Sideritis italica</i> (Mill.) Greuter & Burdet
<i>Epipactis microphylla</i> (Ehrh.) Swartz	<i>Silene echinata</i> Otth
<i>Epipactis palustris</i> (L.) Crantz	<i>Silene parnassica</i> Boiss. & Spruner
<i>Epipogium aphyllum</i> Swartz	<i>Solenanthes apenninus</i> (L.) Fisch. & C.A.Mey.
<i>Erysimum magellense</i> Polatschek	<i>Spiranthes spiralis</i> (L.) Chevall.
<i>Erysimum pseudorhaeticum</i> Polatschek	<i>Stipa dasyvaginata</i> Martinovsky subsp. <i>apenninicola</i> Martinovsky & Moraldo
<i>Euphorbia corallioides</i> L.	<i>Thalictrum calabricum</i> Spreng.
<i>Festuca robustifolia</i> Markgr.-Dann.	<i>Thlaspi precox</i> Wulfen
<i>Festuca violacea</i> Gaudin subsp. <i>italica</i> Foggi, Gr. Rossi & Signorini	<i>Typha minima</i> Hoppe
<i>Genista cilentina</i> Valsecchi	<i>Tolpis virgata</i> (Desf.) Bertol. subsp. <i>grandiflora</i> (Ten.) Pignatti
<i>Gentiana lutea</i> L.	<i>Trifolium brutium</i> Ten.
<i>Gentianella columnae</i> (Ten.) Holub	<i>Trifolium pratense</i> L. subsp. <i>semipurpureum</i> (Strobl) Pignatti
<i>Gymnadenia conopsea</i> (L.) R.Br.	<i>Verbascum niveum</i> Ten. subsp. <i>inarimense</i> Murb.
<i>Helleborus bocconei</i> Ten. subsp. <i>Bocconei</i>	<i>Vicia serinica</i> Uechtr. & Huter
<i>Kochia saxicola</i> Guss	<i>Viola aethnensis</i> Parl. subsp. <i>splendida</i> (W. Becker) Merxm. & Lippert
<i>Lathyrus jordanii</i> (Ten.) Ces., Pass. & Gib.	<i>Viola eugeniae</i> Parl. subsp. <i>eugeniae</i>
<i>Leucanthemum laciniatum</i> Huter, Porta & Rigo	<i>Viola pseudogracilis</i> Strobl

Posidonia oceanica

Cymodocea nodosa

Bryophytes

Antitrichia curtipendula (Hedw.) Brid.

Bryum muehlenbeckii Bruch & al

Bryum schleicheri var. *latifolium*
(Schwagr.) Schimp.

Cinclidotus aquaticus (Hedw.) Bruch &
Schimp

Cinclidotus mucronatus (Brid.) A. L. M.
Guim

Cinclidotus riparius (Brid.) Arn.

Cratoneuron filicinum (Hedw.) Spruce

Cratoneuron filicinum var. *atrovirens*
(Brid.) Ochyra

Encalypta alpina R. Hedw

Fabronia pusilla Raddi

Fissidens osmundoides Hedw.

Herzogiella seligeri (Brid.) Z. Iwats.

Homalia trichomanoides (Hedw.) Bruch
& al.

Hygrohypnum luridum (Hedw.) Jenn.

Isopterygiopsis pulchella (Hedw.) Z.
Iwats.

Myurella julacea (Schwagr.) Spruce

Oncophorus virens (Hedw.) Brid

Orthotrichum speciosum Nees in Sturm

Palustriella commutata (Hedw.) Ochyra

Philonotis tomentella Molendo

Plagiopus oederianus (Sw.) H. A. Crum
& L. E. Anderson

Polytrichastrum alpinum (Hedw.) G. L.
Smith

Pseudoleskeella catenulata (Brid. ex
Schrad.) Kindb.

Pseudoleskeella nervosa (Brid.) Nyholm

Ptycomitrium polyphyllum (Sw.) Bruch &
Schimp.

Schistidium atrofusum (Schimp.) Limpr.

Seligeria pusilla (Hedw.) Bruch & al.

Timmia austriaca Hedw

Timmia bavarica Hessel.

Zygodon forsteri (Dicks.) Mitt

Lichens

Agonimia allobata (Stizenb.) P. James

Arthopyrenia salicis A. Massal

Bacidia circumspecta (Vain.) Malme

Bryoria fuscescens (Gyeln.) Brodo &
D. Hawksw

Caloplaca chrysophthalma Degel

Fuscopannaria saubinetii (Mont.) M. Jørg

Lobarina scrobiculata (Scop.) Nyl.

Mycomicrothelia confusa D. Hawksw

Ochrolechia androgyna (Hoffm.) Arnold

Ochrolechia dalmatica (Erichsen)
Boqueras

Opegrapha ochrocheila Nyl.

Parmeliella testacea M. Jørg.

<i>Gyalecta derivata</i> (Nyl.) H.Olivier	<i>Pertusaria slesvicensis</i> Erichsen
<i>Gyalecta liguriensis</i> (Vězda) Vězda	<i>Pertusaria velata</i> (Turner) Nyl.
<i>Gyalectidium puntilloi</i> Sérus	<i>Phaeophyscia endophoenicea</i> (Harm.) Moberg
<i>Lecanora strobilina</i> (Spreng.) Kieff	<i>Punctelia jeckeri</i> (Roum.) Kalb
<i>Lecidea erythrophaea</i> Sommerf.	<i>Sticta limbata</i> (Sm.) Ach.
<i>Lobaria amplissima</i> (Scop.) Forssell	<i>Strigula stigmatella</i> (Ach.) R.C.Harris

FUNGI

Ascomiceti

Hypoxylon fuscum Pers. (Fr.)

Basidiomiceti

<i>Cerrena unicolor</i> (Bull.) Murill,	<i>Inocybe splendens</i> R. Heim,
<i>Clitocybe squamulosa</i> (Pers.) P. Kumm.,	<i>Macrotiphula fistulosa</i> (Holmsk.) R.H. Petersen,
<i>Collybia alkalivirens</i> Singer,	<i>Mycena romagnesiana</i> Maas Greest.,
<i>Cortinarius anthracinus</i> (Fr.) Sacc.,	<i>Phallus hadriani</i> Vent.,
<i>Cortinarius atrovirens</i> Kalchbr.,	<i>Resupinatus urceolatus</i> (Wallr.) Thorn Moncalvo & Redead,
<i>Entoloma incanum</i> (Fr.) Hesler,	<i>Rhizochaete filamentosa</i> (Berk. & M.A. Curtis) Gresl. Nakasone & Rajchenb,
<i>Entoloma nitidum</i> Quél.,	<i>Rhizopogon luteolus</i> Krombh.,
<i>Exidia plana</i> (F.H. Wigg.) Donk,	<i>Russula aurora</i> Krombh.,
<i>Gastrum fornicatum</i> (Huds.) Hook,	<i>Trichaptum biforme</i> (Fr.) Ryvardeen.
<i>Hericium coralloides</i> (Scop.) Pers.,	

Main human impacts:

There are three "homogeneous economic areas" into the MAB territory:

- Urban centers of Local interest (Agropoli, Vallo della Lucania, Sala Consilina, Sapri), substantially homogeneous nature of the coastal area, characterized by the weight of the tourism sector and greater provision of building infrastructure;
- an indoor area in which a high index aging population and building structures is accompanied by a poor product differentiation and low levels of PIL "pro capite";

- an inner area characterized by a certain product diversification and a high percentage of agricultural production.

Relevant habitat management practices:

The Park has made management plans of SCIs and SPAs. These plans have left the state of conservation of species and habitats. Conservation Measures have been defined, therefore, with priority criteria, for each SCI and SPA. For example we report some type of habitat management practices:

- Rinaturalitation of old forest;
- Protection of coastal dunes;
- Protection of posidonia

Habitats of special interest:

Describe and indicate the location of habitats which are unique or exceptionally important from the point of view of conservation.

The following habitats are named according to the Annex I of the European Commission Habitats Directive (92/43/ECC)

ANNEX I NATURAL HABITAT TYPES OF COMMUNITY INTEREST WHOSE CONSERVATION REQUIRES THE DESIGNATION OF SPECIAL AREAS OF CONSERVATION	
1. COASTAL AND HALOPHYTIC HABITATS	
<i>COD</i>	<i>NAME</i>
1110	Sandbanks which are slightly covered by sea water all the time
1120 *	<i>Posidonia</i> beds (<i>Posidonion oceanicae</i>)
1170	Reefs
1210	Annual vegetation of drift lines

1240	Vegetated sea cliffs of the Mediterranean coasts with endemic <i>Limonium</i> spp.
2. COASTAL SAND DUNES AND INLAND DUNES	
<i>COD</i>	<i>NAME</i>
2120	Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ('white dunes')
2250 *	Coastal dunes with <i>Juniperus</i> spp.
2260	<i>Cisto-Lavenduletalia</i> dune sclerophyllous scrubs
3. FRESHWATER HABITATS	
<i>COD</i>	<i>NAME</i>
3250	Constantly flowing Mediterranean rivers with <i>Glaucium flavum</i>
3280	Constantly flowing Mediterranean rivers with <i>Paspalo-Agrostidion</i> species and hanging curtains of <i>Salix</i> and <i>Populus alba</i>
6. NATURAL AND SEMI-NATURAL GRASSLAND FORMATIONS	
<i>COD</i>	<i>NAME</i>
6110 *	Rupicolous calcareous or basophilic grasslands of the <i>Alyso-Sedion albi</i>
6220 *	Pseudo-steppe with grasses and annuals of the <i>Thero-Brachypodietea</i>
8. ROCKY HABITATS AND CAVES	
<i>COD</i>	<i>NAME</i>
8210	Calcareous rocky slopes with chasmophytic vegetation
8330	Submerged or partially submerged sea caves
9. FORESTS	
<i>COD</i>	<i>NAME</i>
9210 *	Apeninne beech forests with <i>Taxus</i> and <i>Ilex</i>
9220 *	Apeninne beech forests with <i>Abies alba</i> and beech forests with <i>Abies nebrodensis</i>
92A0	<i>Salix alba</i> and <i>Populus alba</i> galleries
92C0	<i>Platanus orientalis</i> and <i>Liquidambar orientalis</i> woods (<i>Platanion orientalis</i>)
9330	<i>Quercus suber</i> forests
9540	Mediterranean pine forests with endemic Mesogean pines

Endangered or threatened plant or animal species:

Identify species (with scientific names) or groups of species of particular interest for conservation, in particular if they are threatened with extinction.

ANIMALS

Mammals included in the IUCN red list (EU25)

<i>Felis silvestris</i> (NT)	<i>Myotis capaccinii</i> (VU)
<i>Lepus corsicanus</i> (VU)	<i>Rhinolophus euryale</i> (VU)
<i>Lutra lutra</i> (NT)	<i>Rhinolophus ferrumequinum</i> (NT)
<i>Mustela putorius</i> (NT)	<i>Rhinolophus hipposideros</i> (NT)
<i>Myotis blythii</i> (NT)	<i>Rhinolophus mehelyi</i> (VU)
<i>Tursiops truncatus</i>	

Birds included in the national red list (forthcoming)

<i>Acrocephalus melanopogon</i> (VU)	<i>Falco eleonora</i> (VU)
<i>Alauda arvensis</i> (VU)	<i>Falco vespertinus</i> (VU)
<i>Alectoris graeca orlandoi</i> (VU)	<i>Gelochelidon nilotica</i> (NT)
<i>Aquila chrysaetos</i> (NT)	<i>Lanius collurio</i> (VU)
<i>Calandrella brachydactyla</i> (EN)	<i>Lanius minor</i> (VU)
<i>Charadrius alexandrinus</i> (EN)	<i>Larus audouini</i> (NT)
<i>Ciconia nigra</i> (VU)	<i>Milvus migrans</i> (NT)
<i>Circaetus gallicus</i> (VU)	<i>Milvus milvus</i> (VU)
<i>Circus aeruginosus</i> (VU)	<i>Nycticorax nycticorax</i> (VU)
<i>Circus pygargus</i> (VU)	<i>Pyrhacorax pyrrhacorax</i> (NT)
<i>Chlidonias niger</i> (EN)	<i>Sternula albifrons</i> (EN)
<i>Coracias garrulus</i> (VU)	<i>Sterna sandvicensis</i> (VU)
<i>Dendrocopos medius</i> (VU)	<i>Sylvia undata</i> (VU)
<i>Falco biarmicus</i> (VU)	

Amphibian included in the IUCN red list (EU27)

Bombina pachypus (EN)

Reptiles included in the IUCN red list (EU27)

Elaphe quatuorlineata (NT)

Fish included in the IUCN red list

Alburnus albidus (VU)

Anguilla anguilla (CE)

Rutilus rubilio (NT)

Arthropods

Butterflies included in the IUCN red list (EU27)

<i>Argynnis niobe</i> (NT)	<i>Melitaea trivia</i> (NT)
<i>Carcharodus lavatherae</i> (NT)	<i>Nymphalis polychloros</i> (VU)
<i>Hipparchia fagi</i> (NT)	<i>Phengaris arion</i> (EN)
<i>Hipparchia statilinus</i> (NT)	<i>Polyommatus dorylas</i> (NT)
<i>Iolana iolas</i> (NT)	<i>Thymelicus acteon</i> (NT)
<i>Lycaena alciphron</i> (NT)	

Dragonflies included in the IUCN red list (EU27)

Coenagrion mercuriale (NT)

Coenagrion caerulescens (NT)

Oxygastra curtisii (NT)

Saproxyllic beetles included in the IUCN red list (EU27)

Cerambyx cerdo (NT)

Cucujus cinnaberinus (NT)

Isotomus barbarae (VU)

Lucanus cervus (NT)

Osmoderma eremita (NT)

Other Arthropods included in the IUCN red list

Austropotamobius italicus (EN)

Rosalia alpina (VU)

Saga pedo (VU)

PLANTS

Vascular Plant species included in the national red list

Androsace villosa L.

Barlia robertiana (Loisel.) Greuter

Botrychium matricariifolium (Döll)
A. Braun

Cephalanthera damasonium (Mill.)
Druce

Cephalanthera longifolia (L.) Fritsch

Cephalanthera rubra (L.) Rich.

Coeloglossum viride (L.) Hartm.

Cyclamen hederifolium Aiton

Cyclamen repandum Sm.

Dianthus rupicola Biv. subsp. *rupicola*

Epipactis helleborine (L.) Crantz

Epipactis leptochila (Godfery) Godfery

Epipactis microphylla (Ehrh.) Swartz

Epipactis palustris (L.) Crantz

Epipogium aphyllum Swartz

Gentiana lutea L.

Gymnadenia conopsea (L.) R.Br.

Limodorum abortivum (L.) Swartz

Listera ovata (L.) R. Br.

Neotinea maculata (Desf.) Stearn

Ophrys fusca Link subsp. *fusca*

Ophrys incubacea Bianca ex Tod.

Ophrys sphegodes Mill. subsp. *sphgodes*

Ophrys tenthredinifera Willd.

Orchis coriophora L.

Orchis italica Poir.

Orchis lactea Poir.

Orchis laxiflora Lam.

Orchis pallens L.

Orchis pauciflora Ten.

Orchis provincialis Balb.

Orchis quadripunctata Cirillo

Orchis simia Lam.

Platanthera bifolia (L.) Rchb.

Platanthera chlorantha (Custer) Rchb.

Posidonia oceanica (L.) Delile

Primula palinuri Petagna

Ranunculus fontanus C.Presl

Serapias cordigera L.

Serapias lingua L.

<i>Neottia nidus-avis</i> (L.) Rich.	<i>Serapias parviflora</i> Parl.
<i>Ophrys apifera</i> Huds.	<i>Serapias vomeracea</i> (Burm. f.) Briq.
<i>Ophrys bombyliflora</i> Link	<i>Spiranthes spiralis</i> (L.) Chevall.
<i>Ophrys fuciflora</i> (F.W.Schimdt) Moench subsp. <i>fuciflora</i>	<i>Typha minima</i> Hoppe

Bryophytes species included in the national red list

<i>Bryum muehlenbeckii</i> Bruch & al	<i>Orthotrichum speciosum</i> Nees in Sturm
<i>Encalypta alpina</i> R. Hedw	<i>Philonotis tomentella</i> Molendo
<i>Homalia trichomanoides</i> (Hedw.) Bruch & al.	<i>Seligeria pusilla</i> (Hedw.) Bruch & al.
<i>Hygrohypnum luridum</i> (Hedw.) Jenn.	<i>Zygodon forsteri</i> (Dicks.) Mitt

Lichens species included in the national red list

<i>Agonimia allobata</i> (Stizenb.) P.James	<i>Lobarina scrobiculata</i> (Scop.) Nyl.
<i>Caloplaca chrysophthalma</i> Degel	<i>Opegrapha ochrocheila</i> Nyl.
<i>Fuscopannaria saubinetii</i> Mont.) M.Jørg.	<i>Parmeliella testacea</i> M.Jørg.
<i>Gyalectidium puntilloi</i> Sérus	<i>Pertusaria velata</i> (Turner) Nyl.
<i>Lecanora strobilina</i> (Spreng.) Kieff	<i>Phaeophyscia endophoenicea</i> (Harm.) Moberg
<i>Lobaria amplissima</i> (Scop.) Forssell	<i>Sticta limbata</i> (Sm.) Ach.

Species of traditional or commercial importance:
Indicate the use(s) of these species or varieties.

Olive tree (production of olive oil)

Biancolilla	Ogliastro Di Torre Orsaia
Cammarotana	Oliva Bianca
Carpellese	Pisciottana
Corneglia	Pizzutella
Cornia	Provenzale
Femminiella Di Torraca	Racioppa
Groia	Romanella
Grossale	Rotondella
Marinella	Salella

Nostrale

Ogliara

Chestnut (for food)

Marrone di Roccadaspide (IGP)

Vines (for wine production)

Aglianico

Aglianicone

Fiano Bianco

Vegetables (for food)

Broccoli of Vallo di Diano

White Artichoke of Pertosa

Red Artichoke of Paestum

Round Artichoke of Paestum (IGP)

Chickpea of Cicerale

Bean of regina di Gorga

Bean of Regina di Montano Antilia

Apricot (for food)

Pirnicocco nustrale

Pirnicocco Filomena

Pirnicocco faccia bella

Plum (for food)

Pruma vita

Pruma natalina

Pruma minna ri vacca

Pruma pacca ri culo

Apple (for food)

Melo ghiaccio giallo

Melo rizzo

Melo limoncello pinto

Melo limoncello del Corticato

Sanginara

Sanginella Bianco

S. Sofia Bianco

Bean of Controne

Bean of Mandia

Striated Bean del Vallo di Diano

Bean tabacchino di Ceraso

Bean tondino bianco del Vallo di Diano

Strawberry of Alburni

Pruma Francesca

Pruma zuccherina

Pruma san giovanni

Melo limoncello antico

Melo macchia verde

Melo limoncello pacca rossa e gialla

Melo tenerello

Animal (for food and/or milk production)

Capra cilentana (goat)

Bufala mediterranea (buffalo)

Vacca podolica (cow)

Maiale nero di Rofrano (pig)

IV. ZONATION

Names of the different areas

Indicate the names of the different areas which make up the core area(s) and buffer zone(s).

Core Area	Terrestrial	<ul style="list-style-type: none"> - zone "A1" (integral reserves) according to the Plan of the National Park of Cilento e Vallo di Diano; - zone "B2" (oriented general reserves to formation ancient wood) according to the Plan of the National Park of Cilento e Vallo di Diano;
	Marine	<ul style="list-style-type: none"> - Areas "A", "B" and sub "B" according to the Marine Protected Areas zonation map - MPA "<i>Costa degli Infreschi e della Masseta</i>"; - MPA "<i>Santa Maria di Castellabate</i>"
Buffer Zone	Terrestrial	<ul style="list-style-type: none"> - Zone "A2" integral reserve of hystorical, cultural and landscape interests according to the Plan of the National Park of Cilento e Vallo di Diano - Zone "B1" arieded general reserve according to the Plan of the National Park of Cilento e Vallo di Diano - Zone "C" (protection) according to the Plan of the National Park of Cilento e Vallo di Diano - Zone "D" (economical and social promotion) according to the Plan of the National Park of Cilento e Vallo di Diano
	Marine	<ul style="list-style-type: none"> - Area "C" of the MPA "<i>Costa degli Infreschi e della Masseta</i>" - Area "C" of the MPA "<i>Santa Maria di Castellabate</i>".
Transition Zone	Terrestrial	<ul style="list-style-type: none"> - Contiguos Areas
	Marine	<ul style="list-style-type: none"> - coastal marine territory facing the terrestrial Biosphere Reserve, mainly extending between the two MPAs, and surrounding them till 100 m depth

There are only four Core Area that have directly contact with Transition Zone. In these situations there are physical boundaries that protected Core Area (mountain, cliff, river/gorge)

For more information see the annex (carta della zonizzazione mab)

Spatial configuration

A **Biosphere Reserve Zonation map** showing the delimitations of all core area(s) and buffer zone(s) **must be provided**. Also indicate the approximate extent of the transition area(s).

<i>Reserve Zone</i>	<i>Division between the terrestrial and marine</i>	<i>Proposal Size (ha)</i>	<i>Old Size(ha)</i>
<i>Core Area</i>	<i>Terrestrial Area</i>	19.294	26.000
	<i>“Costa degli infreschi e della Masseta” Marine Area</i>	521	-
	<i>“Santa Maria di Castellabate” Marine Area</i>	3.044	-
	<i>TOTAL</i>	22.859	26.000
<i>Buffer Area</i>	<i>Terrestrial Area</i>	158.891	50.000
	<i>“Costa degli infreschi e della Masseta” Marine Area</i>	1.836	-
	<i>“Santa Maria di Castellabate” Marine Area</i>	4.033	-
	<i>TOTAL</i>	164.760	50.000
<i>Transition Area</i>	<i>Terrestrial Area</i>	141.654	105.000
	<i>Marine Area</i>	66.230	-
	<i>TOTAL</i>	207.884	105.000
<u>Biosphere Reserve Area</u>	<u>TOTAL</u>	<u>395.503</u>	<u>181.000</u>

Brief justification of this zonation (in terms of the various roles of biosphere reserves) as it appears on the zonation map.

In particular, the Park has identified the areas of natural quality into four levels based on the biogeographic value, maturity (stability) of biotic communities, the sensitivity of the hydrological equilibrium, in addition to biological or geological emergencies.

<i>Reserve Zone</i>	<i>Division between the terrestrial and marine</i>	<i>Description of the components</i>	<i>Motivation / changes to the previous zonation</i>
<i>Core Area</i>	<i>Terrestrial Core Area</i>	<ul style="list-style-type: none"> - zone "A1" (integral reserves) according to the Plan of the National Park of Cilento e Vallo di Diano; - zone "B2" (oriented general reserves to formation ancient wood) according to the Plan of the National Park of Cilento e Vallo di Diano 	The territory with high value of natural quality identified into the Master plan : Areas A1 integral reserves and B2 oriented general reserve to formation ancient wood. This subdivision is different by the old subdivision of MAB area, because it derives by master plan approved recently. There are only few (three) core area directly in contact with the transition areas but in such cases there are physical and orographic barrier. This proposal subdivision is supported by scientific studies. The same studies are used to realize the park master plan and zonation.
	<i>Marine Core Area</i>	<ul style="list-style-type: none"> - Areas "A", "B" and sub "B" according to the Marine Protected Areas zonation map - MPA "Costa degli Infreschi e della Masseta"; - MPA "Santa Maria di Castellabate" 	The marine territory with high value of natural quality is identified into the zonation map of protected marine areas, created in 2010 by Environmental Italian Minister. This subdivision is different by the old subdivision of MAB area, because now we add these areas of strategic and relevant naturalistic and biological interest.
<i>Buffer Area</i>	<i>Terrestrial Buffer Area</i>	<ul style="list-style-type: none"> - Zone "A2" integral reserve of historical, cultural and landscape interests according to the Plan of the National Park of Cilento e Vallo di Diano - Zone "B1" oriented general reserve according to the Plan of the National Park of Cilento e Vallo di Diano - Zone "C" (protection) according to the Plan of the National Park of Cilento e Vallo di Diano - Zone "D" (economical and social promotion) according to the Plan of the National Park of Cilento e Vallo di Diano 	These areas identified into the master plan represent the pillow of protection of core area. These areas identified in master plan are A2, B1 C and D. Into the master plan you can find the directive of management of these areas.
	<i>Marine Buffer Area</i>	<ul style="list-style-type: none"> - Area "C" of the MPA "Costa degli Infreschi e della Masseta" - Area "C" of the MPA "Santa Maria di Castellabate". 	The marine territory with medium value of natural quality is identified into the zonation map of protected marine areas, created in 2010 by Environmental Italian Minister. This subdivision is different by the old subdivision of MAB area, because

			now we add these areas of strategic and relevant naturalistic and biological interest.
<i>Area transition</i>	<i>Terrestrial transition Area</i>	- Contiguous Areas	The transition areas is different respectively the first zonation because, now there are created to contiguous area that represent the protection of park territory. These areas with low value of natural quality are identified in a specific regulation, with minor grade. These areas represent the promotional and economical development of all territory.
	<i>Marine transition Area</i>	- coastal marine territory facing the terrestrial Biosphere Reserve, mainly extending between the two MPAs, and surrounding them till 100 m depth	The management of this area is represented by group of coastal action. In this group are present the National Park and the coastal municipality. this area represent the promotional and economical development of coastal territory.

HUMAN ACTIVITIES

Population living in the reserve

Approximate number of people living within the Biosphere Reserve.

	Permanently / Seasonally	
Core Area(s):	5.000	/
Buffer Zone(s):	65.000	/
Transition Area(s):	150.000	/

The number of people living seasonally within the Biosphere Reserve, principally in transition areas, is reported into tab 1 (tourism section).

Brief description of local communities living within or near the Biosphere Reserve.

Cilento's population lives mainly on agriculture and tourism, especially during the summer.

The Park has always been a land of immigrants, and therefore characterized by a very limited demographic dynamics in the long run. In contrast to the rest of the country, between 1861 and 2001, the population living in the municipalities increased by only 20%, from 229 000 inhabitants in 1861 to 271 000 inhabitants in 2000.

The influx has affected, in recent decades, above all, the internal common areas, and only recently the coastal municipalities have absorbed part of these flows. The migration rates are always negative for inland areas; record, however, an alternate pattern, with some negative values, for the coastal areas.

Indicate ethnic origin and composition, minorities etc., their main economic activities (e.g. pastoralism) and the location of their main areas of concentration, with reference to a map if appropriate.

The name of "Cilento" derives from "cis alentum," that is "beyond dell'Alento", so the Romans named it the land between Solofrone and Alento rivers.

The story of Cilento originates from the two greek cities of Poseidon-Paestum and Elea-Velia.

Poseidon was founded by sybarites who settled in the seventh century BC while the city of Elea by the Phoenicians, who arrived in the sixth century BC. Sybarites mission was to extend their supremacy over the territory of the neighboring Lucanians, and that caused serious conflicts with the Italic people around the fourth century BC

Elea, since it has a large port and a powerful commercial fleet, but had a maritime vocation, and aspired to expand their trade on the sea, so he had better relations with local people and always maintained its independence, at least until the conquest by the Romans. Probably just this much more confidence in the city contributed to the birth of the Eleatic school of philosophy, which exerted a significant influence, with Parmenides and Zeno, and in particular the development of Western philosophical thought.

Actually the main economic activities is the agriculture. The agricultural sector, within the area of the Park is characterized by a strong heterogeneity. It is possible identify, in fact, areas where agriculture is carried out according to modern cultivation techniques and Cilento hinterland mountain areas, where agriculture is still of type extensively and is particularly devoted to sheep farming and grain growing. Park's agriculture is also characterized by a high degree of typicality and traditions. Recently, in fact, some agricultural products in the area have gained recognition Community of their typicality (olive oil, wine).

Name(s) of nearest major town(s).

Vallo della Lucania, Agropoli (villages internal to the MAB), Salerno (70 km from MAB) e Napoli (110 km from MAB)

Cultural significance of the site

Briefly describe the Biosphere Reserve's importance in terms of cultural values (religious, historical, political, social, ethnological).

The wideness and the bio-geodiversity of the territory of the Park are matched by the variety of ecosystems of elevated environmental, naturalistic and landscape value. Besides, it is exceptional the presence of historical-cultural testimonies connected to the physical context: the archaeological area of Paestum located on the vast

"piastrone" of travertino and the Chartreuse of Padula, at the base of Mount Maddalena, to which a sharp net of historical villages of high interest is added (the abandoned suburbs of Roscigno Vecchio and S. Severino, for example), of castles, of vast archaeological areas (Elea Velia and Roccagloriosa), of churches and places of cult, often framed in sceneries of landscape and elevated environmental value, as in the case of the Sanctuary of the Madonna of Novi on Mount Gelbison.

In such sense, therefore, the Cilento constitutes a real "living landscape" that, maintaining an active role in the contemporary society, preserves the traditional characteristics that made it in the past, in the organization of the territory, in the plot of the paths, in the structure of the cultivations and in the system of the settlements.

In the Cilento, in fact, sea and mountain join together, between east and west, between northern cultures and African cultures: the territory melts people and civilization and preserves the traces in its distinctive characteristics.

Use of resources by local populations

Uses or activities in the Core Area(s):

These areas have low population density, combined with a reduced production. The characteristics of this area, in particular their high degree of naturalness, are elements that promote activities related to nature and environmental tourism. In fact there are sites of high nature value interconnected by a network of trails. There are limited activities related to farming and local agriculture with niche products such as: "Caciocavallo", "mozzarella" in myrtle, small production of organic food: fruit, vegetables, etc..

The marine territory is characterized in part by no-take no-use zones, in part by zones where a few fishermen utilise artisanal and selective gears. Tourist practices are scarcely developed and mainly consist of pleasure boating.

Main land uses and economic activities in the buffer zone(s):

In the Biosphere Reserve there are 43,798 farms, most located in the buffer zone. The Agricultural Sector has some importance, both in terms of employment both in terms of value added. Cultivations of the Utilized Agricultural Area are divided as follows: 43% olive, 17% cereals, 15% forage crops, 7% orchards and 4.14% wheat. The cultivation of the vine are for 3934 hectares, equal to 5% of the total area, slightly above the provincial (Salerno) average. 4% of this area is for DOC and DOCG wines. There are also some higher-value, typical, products:

- IGP Products registred by UE: Artichoke of Paestum, Apple "Annurca" of Campania Region, White Beef of the Central Appennine, Bean of Controne and Chestnut of Roccadaspide;

- DOP Products recognized by UE: “Caciocavallo Podolico” (cheese)), White Cool of Cilento, Extra Virgin Olive of Cilento and “Mozzarella Bufala” (cheese Campania Region);
- SLOW FOOD: “Cacioricotta” (cheese of Cilento), Anchovies of Menaica, Artichoke white of Pertosa and “Soppressata di Gioi” (typical salami).

The use of marine territory is mainly characterized by artisanal fishery, carried out all along the year by traditional and highly selective gears, some of them, as the “menaica” for anchovies, are disappearing along the Mediterranean coasts. Tourist bathing and boating is rather intense only in the summer season (July-August).

Main land uses and major economic activities in the Transition Area(s):

This area is characterized by tourism and manufacturing. The tourism sector is one of the leading sectors in the economy of the biosphere reserve, characterized by remarkable natural beauty, from a historical and archaeological heritage of high value and important to preserve cultural traditions. Tourism is a phenomenon almost exclusively localized in certain areas of the country and particularly in the coastal strip. However, partly as a result of some initiatives promoted by the Biosphere Reserve Authority (Park Authority), its attractiveness has further spread in the territory. In fact, some municipalities in the inland areas have entered the tourism market, demonstrating an increasing ability to attract tourism.

The marine territory is characterized both by recreational and small scale fishery, including the use of trawling and surrounding nets. Tourist bathing and boating is intense especially in the summer season (July-August).

Possible adverse effects of uses or activities in the transition area(s) and remedial measures taken:

The main activities and uses which are negative for transition area of consist of:

- excessive anthropogenic load, concentrated mainly in summer in the coastal municipalities;
- Some residual mining;
- Fires;
- Micro widespread illegal building.

The Park Authority has put in place a series of actions designed to combat and limit the adverse effects of activities mentioned, such as:

- Aid for small and medium enterprises and local governments for the creation and/or expansion of craft activities and tourist accommodation widespread, promotion and realization of cultural events, enhancement of geodiversity and biodiversity of the region, aimed at the relocation and seasonal adjustment tourist flows;

- Recovery of degraded areas and abandoned quarries (Towns of Giungano, Laurino, Roccagloriosa, etc.);
- Activities of prediction and prevention (including experimental work with prescribed fire) of forest fires, in collaboration with the Campania Region, the University Federico II of Naples and the Local Authorities (Municipalities and Mountain Communities);
- Monitoring and control of land through the Local Coordination Environment of State Forestry, in order to combat illegal building. In addition, the Park Plan (approved by the Campania Region Authority in December 2009) is a legislative instrument that allows a more effective and proper land management.

If known, give a brief summary of past/historical land use(s) of the main parts of the Biosphere Reserve:

The Cilento and Vallo di Diano National Park guards exceptional evidence of the history and civilisation of the ancient Mediterranean populations. The result of mankind's interaction with its natural environment, this landscape offers an extraordinary synthesis of historical, economical, social, artistic, cultural, and spiritual events. From the mountains to the sea, the land conserves significant traditional characteristics that can be traced to the layout of the land, the network of routes, the system of settlements, and the structure of the cultivations. Together with the archaeological area of Paestum, the important site of Velia is an eminent example of architecture dating to the period of the first Greek colonisation in Italy and is a wonderful testimony of the encounter between Magna Græcia and the Apennine and Mediterranean cultures. Dating to Medieval times, on the other hand, we have the imposing complex of the Certosa di Padula, one of the most magnificent monuments found in southern Italy.

The Park embraces a territory of approximately 181,000 hectares, from the Tyrrhenian coast, between the gulfs of Salerno and Policastro, as far as the foothills of the Apennines in Campania, Basilicata and Calabria. This area of exceptional natural beauty and aesthetical importance encompasses grand coasts rich in bays and inlets, mountains complete with spectacular karst phenomena, and an extraordinary richness in unique endemic species of vegetation. The land is mainly composed of rounded hills and mountains with jagged ridges, with the exception of the small coastal plains and Vallo di Diano, a large internal flatland which once contained the waters of a lake that has now disappeared. The altimetry of this land so rich in contrasts changes just as rapidly from the sandy coasts to the almost two thousand metre height of Monte Cervati and the other peaks: Monte Alburno (1,742 metres) and Monte Gelbison (1,705 metres), concentrated inland, and Monte Bulgheria (1,224 metres) and Monte della Stella (1,130 metres) which slope down towards the sea, creating evocative high, rocky coasts. Lush Mediterranean scrub adorns the coastal zone together with olive trees and evergreen forests. Oak trees, maple trees, lime trees, elm trees, ash trees, and chestnut trees grow inland, while woods of beech trees cover the higher slopes of the

mountains. The impressive variety of the Park's morphology and flora corresponds to a diverse and rich assortment of fauna, including golden eagles, Corsican hares, rock partridges, wolves, martens, wildcats, and otters. A land which brings to life the footprints of legends, including Hercules and the Vastasi, the giants of Monte della Stella, Archangel Michael, and the dolmens of San Mauro Cilento, the nymph Leucosia, Palinurus and Aeneas, Cilento was called Enotria by Herodotus, Plinius, and Stephanus Byzantinus. The place name seems to derive from cis-Alentum, i.e., "on this side of the Alento", or from the Byzantine Greek Cyr- Alynthos, that is "city that dominates the Alento". The hill and mountain region of Cilento was occupied by the Lucanians while the coast was colonised by the Greeks. An area of contact between different peoples and civilisations (Lucanians, Romans, and Eastern Christians) with the Fall of the Roman Empire, the region was assailed by barbaric invasions: Visigoths, Goths, Lombards, and continuous attacks from the Saracens. This meeting of different cultures led to the creation of architectural and pictorial complexes of great beauty, such as the Badia di Pattano with the San Filadelfo chapel and the frescoes of the Basiliiana chapel at Lentiscosa. With the Normans, the Barony of Cilento was entrusted to the Sanseverino family who conserved it until it was partitioned into small fiefs in 1552. The presence of Benedictine monks, on the other hand, led to the repopulation of the land and the expansion of cultivation. During the Risorgimento, Cilento was the linchpin of political movements in 1828 and 1848, repressed by the Bourbons. In addition to long stretches of beaches placed at the mouth of the main waterways, the Cilentan coast, dotted with towers built against the Saracen pirates, also offers spectacular rocks and cliffs such as the beautiful Punta Tresino, near the old maritime village Agropoli, which faces out onto the Protected Marine Area of Santa Maria di Castellabate. Just further on there is the Promontory of Licosa, which gets its name from the siren who threw herself into the sea for her love for Ulysses and reaches out into the sea with its wonderful Mediterranean undergrowth, its ruins, and historical and artistic evidence. A mule track, which starts near the centre of San Marco and leads to Ogliastro Marina, runs along the small peninsula, offering a breathtaking panoramic view of the sea. Nearby you can admire Ripe Rosse of Montecorice, a town with an important architectural patrimony, including the Madonna delle Grazie chapel with its windmill, the 16th century San Biagio church, and the Torre dell'Arena. Clinging to a calcareous escarpment and surrounded by the green hues of the holm oaks, in a dominant position with respect to the village of the same name stands the San Mauro Martirerupestrian Sanctuary. The aquariums of the Maritime Museum at Pioppi near the ancient agricultural village of Pollica, on the other hand, enable us to discover the interesting forms of life found in the sea. Lying behind this portion of the coast, Monte della Stella has always been considered a particularly advantageous point for controlling the underlying stretch of sea. Following on southwards, past the seaside resort town of Marina di Ascea, we come across Pisciotta, a Medieval farming village which faces onto the sea from a high hill covered in olive trees. Settled in a picturesque cove at the foot of the promontory of the same name, Palinuro is famous for its rich sea grottos and magnificent olive tree groves. The characteristic village of Marina di Camerota lies in a superb position between the jagged rocks and cliffs of the Protected Marine Area of

Costa degli Infreschi e della Masseta, among which we find the Grotta della Cala dei Monti, near to the steep Vallone del Marcellino and the wonderful Cala degli Infreschi, which gets its name from the infinite cool freshwater streams that spring up beneath the sand or directly into the sea. The inland landscape is characterised by the fascinating deep ravines carved out over the centuries by rivers such as the Mingardo, Sammaro, Bussentino, and Calore which weave through giant potholes, rapids, waterfalls, and two amazing Medieval humpback bridges. Crossing one of such bridges, downstream of the historical town centre of Laurino, we come to the church of Sant'Elena. From here we can climb back up the Valle Soprana. At the summit, after surpassing the rocky peaks of the Scanno del Tesoro and following the solitary trail among old isolated houses and enchanting woods of beech trees, you can admire the spectacular Grava di Vesolo. To the south of the village of Piaggine, on the other hand, we find the Grava del Raccio which, with its pothole 224 metres deep, is one of the world's steepest vertical caverns. It is impossible not to be swept away by the unique charm of the ghost-town Roscigno Vecchio which gets its name from the dialectal expression *russignolo* which means nightingale. Abandoned for approximately a century, it has been brought back to life thanks to the renewed interest in the roots and culture of the Cilentan people, the evidence of which is kept in the small Ethnographical Museum found in the restored rooms of the former bishop's residence and the old town hall. An ample historical reconstruction has been created of social customs, work tools, and the everyday life of the farming world. One of the most visited religious buildings in all of Campania, the Madonna di Novi Velia Sanctuary stands on the top of Monte Gelbison or Monte Sacro. Founded by the Basilian monks, legend has it that the peak was consecrated by Angels. During the pilgrimages, which are carried out while singing litanies, one or more women proceed while balancing the centa, an offering of a hundred candles bearing coloured ribbons, on their heads. The sanctuary is part of the ancient cult of the Seven Madonnas found in all of southern Italy's cultural systems. These places of veneration are always located on high ground closed in a circle facing towards the sea. Of the Seven Madonnas – as is the case in Novi Velia – one is indicated as “ugly”, because she is portrayed with dark skin and is called “*schiaivóna*”, i.e., foreigner, but ends up being the most beautiful and most beloved of all of them. Dating back to the 4th or 5th century BC, Roccagloriosa and the picturesque abandoned medieval village, San Severino di Centola, are two interesting examples of impenetrable and high-lying places located in strategic positions for defence and control of the territory. The more ancient complex of San Severino, whose castle, baronial palace, and ancient houses remain, clings to a precipice known as the “Devil's Throat”. Roccagloriosa, whose name derives from the traditional veneration of the Gloriosa Madre di Dio (i.e., the Glorious Mother of God), on the other hand, boasts the remains of Lucanian tombs. The Mediterranean diet is a lifestyle as well as a nutritional model inspired by the dietary traditions of the countries of the Mediterranean basin. The father of the Mediterranean diet is the American physiologist Ancel Benjamin Keys, whose personal story is connected to Cilento, his second home. He spent over 30 years there studying the traditional dietary habits and lifestyles of the local populations on a scientific basis. In Cilento, at Pioppi, Keys lived (from 1960 to 1990) and worked

together with other scholars and discovered the value of the Cilentan diet in the prevention of cardiocerebrovascular diseases and in lengthening life expectancy, as set out in the book “Eat Well and Stay Well” and subsequent publications. In Nairobi on 16th November 2010, UNESCO declared the Mediterranean Diet an Intangible Cultural Heritage. A historic date for Italy, Spain, Greece, and Morocco, who reaped the rewards of the joint effort, begun on 13th March 2010, with the undersigning of the “Declaration of Chefchaouen”. There are countless festivals and fairs dedicated to the products of this region.

Tourism

Indicate the number of visitors coming to the Biosphere Reserve each year

National: see tab. 1

Foreign: see tab. 1

Tab 1 Arrivals and presences of italian anf foreings- Years 1997-2005						
	Italian		Foreings		Total	
	arrivals	presences	arrivals	presences	arrivals	presences
1997	309.148	2.869.449	117.557	1.290.204	426.705	4.159.653
1998	428.850	3.025.172	152.643	1.528.435	581.493	4.553.607
1999	426.000	3.232.853	142.811	1.570.909	568.811	4.803.762
2000	440.707	3.454.729	158.667	1.689.925	599.374	5.144.654
2001	446.585	3.508.559	156.034	1.665.440	602.619	5.173.999
2002	440.707	3.454.729	158.667	1.689.925	599.374	5.144.654
2003	451.698	3.399.912	151.211	1.629.212	602.909	5.029.124
2004	453.278	3.286.464	142.056	1.497.324	595.334	4.783.788
2005	422.761	3.121.012	130.736	1.411.210	553.497	4.532.222

data source ISTAT and EPT (institute for tourism of Salerno Province)

Type(s) of touristic activities (Study of fauna and flora, recreation, camping, hiking, sailing, horseriding, fishing, hunting...).

The territory is characterized by a strong differentiation of the human pressure, substantially due to tourist flows, that varies according to the period of the year or the proximity to the coast. The greatest part of the tourist flow concentrates in the summer months in the principal locations of seaside holidays. The presence and the exploitation of the sites would increase, subsequently, toward the inner areas a part of the "coastal" tourists, above all the part interested in naturalistic holidays, favoring, therefore, the tourism addressed toward a sustainable fruition of the environmental values.

Some geosites as the caves of Castelcivita, of Pertosa, the coastal ones of Camerota, the oasis of Morigerati, Mount Gelbison, Chartreuse of Padula, the archaeological areas of Paestum and Velia already represent some focal points of the geo-tourism, because every year they are visited by about ten thousand tourists.

In addition, the territory of the Biosphere Reserve presents some cultural, historical, natural and architectural characteristics as well as a network of services / facilities which would allow a diversification of the various tourism types such as:

- Food and wine tourism;
- Tourism hiking (trekking, horseriding, etc.)
- Geotourism;
- Tourism related to scientific research on biodiversity

Tourist facilities and description of where these are located.

Tourist facilities are concentrated mainly on the coast. Agritourisms are in interior Park and natural sites equipped for the reception of tourists (Pertosa Caves, Castelcivita Caves, Morigerati cave, Velia, Paestum, Certosa di Padula and many Museums)

For more information see the annex (carta dei sistemi storici culturali unesco, carta dei musei e delle strutture ricettive)

Income and benefits to local communities

Indicate for the activities described above whether the local communities derive any income directly or indirectly and through what mechanism.

Even from an *economic point of view*, the situation all over the territory shows *signs of development*.

In the Mountain Community of Bussento, the productive activity is focused on agriculture and tourism. In the meantime, only youth unemployment has in diminution, still further proof of the fact that – as already stated in the interpretation of the demographic statistics – the youngest generations that leave the territory are less.

In the Mountain Communities of Calore Salernitano, Alburni, Tanagro, Gelbison Cervati, Lambro and Mingardo and Vallo di Diano, the activity rate is similar to that in the surrounding areas and accordingly lower than national levels.

The activity rate at first sight seems quite positive but it must be interpreted in strict relation with the other employment statistics. In four towns (Agropoli, Omignano, San Mauro Cilento and Serramezzana), all with very positive trends, the activity rate is above provincial levels (and in the case of San Mauro Cilento above national level); furthermore, in almost all cases, it is growing constantly and rapidly (with maximum acceleration and consistency of the phenomenon in Serramezzana and Agropoli) meaning that entry to the employment market is widening without however having sufficient capacity to absorb the demand.

The final indicator of the economic trend that has been taken into consideration refers to the degree of growth in the tertiary sector. Productive activities here appear to be very little diversified, unlike the rest of the province and the region, whose degree of tertiary growth is higher than the national statistics. The *average level* inside the Park is (34%). In this case the internal distribution is general throughout the territory, as only very few towns are above these levels (Torre Orsaia, in the Community of Bussento, Piaggine and Valle dell'Angelo the Community of Calore Salernitano, Roscigno in the Community of Alburni, Moio della Civitella the Community of Gelbison Cervati where Vallo della Lucania is higher than the national level, Centola and Laurito in the Community of Lambro and Mingardo, and finally Polla and Sant'Arzenio in the Community of Vallo di Diano).

An analysis of the Mountain Community of Alento Montestella is in part different; the distribution of the phenomenon is not uniform: inside the area (or in the target area), there is a *positive trend* in the towns inside the Park, unlike those outside. However, while the *consistency of the tertiary sector in 2001* appeared to be satisfactory in some towns (Torchiara and Agropoli are above national levels, while Castellabate, Pollica, Ascea and Sessa Cilento are only slightly below), others (Cicerale, Laureana Cilento, Lustra, Montecorice, Perdifumo, Serramezzana and Stella Cilento) still have a degree of tertiary activity that is lower than the average in the Park.

V. RESEARCH AND MONITORING PROGRAMMES

Brief description and list of publications of past research and/or monitoring activities.

PAST BIOTIC RESEARCH

The flora of the sandy coast of the National Park of Cilento and Vallo di Diano

Coastal areas are a part of the territory of the park subject to continuous change due to the presence of man. Particularly, the sandy coasts are those that were affected to a greater extent by human activities such as urbanization, beach tourism, fires. With these premises, the “Ente Parco” has conducted a research for the characterization of flora and vegetation of the Park's beaches in order to get a picture of the health of these areas of high conservation value. The study included all the beaches of the park who had psammophytic vegetation. The survey was conducted on the flora of the natural vegetation through herborization, which allowed to obtain a herbarium of the psammophytic flora of the Park. The vegetation survey was carried out using the phytosociological method. In addition, special attention was given to the identification of human disturbance on dune ecosystem (trampling, cutting, fire, etc.). It was defined a list of 302 entities, of which 24 are new for the park. Among the places investigated, the beach of Cala del Cefalo, in Marina di Camerota and the beach of Torre Caprioli in Centola were those with the highest number of floristic entities, due to the fact that these are the beaches that have suffered less the human impact.

Identification and distribution of *Minuartia moraldoi*

Minuartia moraldoi is suffruticose-cespitose perennial plant, belonging to the family Caryophyllaceae and represents a rare endemism of the Park. The research allowed to define *M. moraldoi* as a new species after a comparative study with similar entities in the group of Graminifoliae [*M. graminifolia* (Ard.) Jáv. subsp. *graminifolia*, *M. graminifolia* subsp. *clandestina* (Portenschl.) Marttf., *M. graminifolia* subsp. *rostani* (Ten.) Marttf., *M. saxifraga* (Friv.) Graebn. subsp. *saxifraga*, *M. saxifraga* subsp. *timolea* Marttf., *M. pseudosaxifraga* (Marttf.) Greuter & Burdet, *M. stellata* (E.D. Clarke) Maire & Petitm.] that are present both in Italy and the Balkan Peninsula and Turkey. This study has allowed to identify the population of the Cilento as a new species because of its phenotypic, ecological and chorological characteristics. The species has so far been reported only on the limestone cliffs of the western slope of Mount Gelbison at thaltitudes between 1600 and 1700 where it is present in a few outcrops near the summit but it was probably more widely distributed before the construction of the old sanctuary, which currently occupies the entire summit of the mountain. Because of its rarity and limited distribution, this species deserves special attention for its preservation.

Wolf monitoring

The expansion in numbers and distribution of the wolf (*Canis lupus*), observed in Europe in recent decades, is linked to a combination of positive factors as the

adoption of protection measures for the species, the establishment of protected areas, the abandonment of agriculture in mountainous areas, an increase of some species of wild ungulates (including wild boar) and the ecological plasticity of the species. The long-term conservation of the species is related to the management measures on a national scale, which must be accompanied by an accurate knowledge of the status of populations at the local level.

The specific objective of this study was a first knowledge of the status of the wolf population in some areas of the Park (Alburni and Cervati Mountains), in reference to the individuals number and reproductive success. The lines of investigation were:

- estimation of winter population through snow-tracking activities;
- Verification of the presence of a nucleus breeding through wolf-howling technique.

The analysis of the data obtained from snow-tracking activities allowed to estimate a wolf population of 3-4 individuals in the area of Alburni, and of 4 - 5 individuals in the area of Cervati.

The presence of a nucleus breeding of wolves was verified both on Alburni and Cervati Mountains

Census and distribution of bats

Chiroptera, commonly known as bats, have the irreplaceable role of the major predators of nocturnal insects. In Europe are reported 37 species of bats, mostly characterized by a precarious conservation status and in some cases at risk of extinction. This phenomenon, due to massive use of pesticides in agriculture, the destruction of natural environments, the disturbance of the sites of refuge, breeding and wintering, has prompted the inclusion of standards of protection in international legislation. The project allowed to census 21 species of bats on the 35 present in Italy. They live not only in the numerous caves and rock cavities, but also in the forests, where they find shelter in the hollows of old trees. Many species of bats as a refuge exploit the human construction, often in the countryside, in fact, abandoned houses are often colonized by bats. During the project were also used nest boxes (bat-box), to promote the recolonization of not excessively degraded forest. Of great ecological importance is the presence in the park of Bechstein's bat (*Myotis bechsteinii*), one of the rarest European bat species, related in forest environments.

Small Island - the study of bird migration transahariani

The objective of the Small Islands Project is to census and design a series of species of birds, whose populations show serious declining trends, through the technique by ringing. The project, coordinated by ISPRA, has been active for 21 years at 48 stations in seven countries of the Mediterranean, and the activities taking place simultaneously at all sites involved in the period mid-April - mid May, critical moment for the passage of immigrants coming from Africa.

The Cilento joined the Small Islands Project in 2003, with the first station of Pisciotta and then to Capo Palinuro, which has proved a strategic area for the parking of birds survivors by crossing the Mediterranean. In the several years have been captured and observed particularly rare and vulnerable species. In these years have been ringed

5659 birds of about 80 taxa. Through this project has been started to determine the pattern of connectivity between the Cilento coastal areas and locations of nesting migratory species in transit, on the basis of data from 14 birds captured in Cilento and from or reversed in 7 different states.

Project Lepidotteri

The study of butterflies is essential to contribute to their preservation, identifying precisely the different phases of their life cycle and what stages are more sensitive to the various causes of human disturbance. In Campania studies and publications on lepidotterofauna are inadequate. To fill this knowledge gap, the Park Authority has developed a research project on lepidotterofauna a daytime flight. This project involved monitoring activities throughout the park with the aim of defining the complete lists of all species of butterflies found in the localities examined. Of the approximately 250 species of butterflies flying day known in Italy, they have been recorded in the park 132, which is more than 53%. The final product of the project was an informative book that compared to similar publications of the innovative features. Indeed, the volume does not just describe the species and their distribution, but it describes the larval food plants and, for the first time, evaluates the impact that grazing has on the survival of individual species of butterflies. Therefore, the information contained in the volume constitute the starting point for further investigation and to implement protective actions of moths.

Master Plane of SIC “Scoglio del Mingardo e Spiaggia di Cala del Cefalo”

The SIC called " **Scoglio del Mingardo e Spiaggia di Cala del Cefalo** " (IT 8050041), is characterized by tree vegetation (pine *Pinus halepensis*), shrub (a Phoenician juniper Mediterranean maquis), perennial (Embryonic shifting dunes) and annual (along the drift lines) herb. These extremely important natural environments are particularly sensitive to human presence. The tourist use for bathing, concentrated mainly in the summer months, it has caused the degradation and may cause permanent damage to the dune vegetation. In order to start a sustainable management of habitats in the SCI, the Park Authority has adopted a special "study tourism capacity" whose end product was the Management Plan (PDG) of the SIC.

Preservation of the Coturnice

The Coturnice (*Alectoris* Greek) is a classic example of an umbrella species, namely the protection of which produces a natural consequence, the protection of entire ecosystems and communities. Currently in Campania native Coturnice populations are present on only some of the main mountain ranges of the National Park of Cilento and Vallo di Diano and this increases the responsibility of the Park Board for the Protection of the species, which therefore conducted a research project to learn its status.

Main achievements:

Definition of the areal distribution (real and potential) and the density of the coturnice;

Genetic analyzes have demonstrated a strong homogeneity between specimens Cilento but also the risk of genetic pollution with specimens of *A. Chukar* introduced in the past for hunting;

Analysis of landscape structure to define the changes in land use have occurred over time and the fragmentation of habitats, factors crucial to the survival of *A. Greek*.

Check list and census of Anphibia

A check list of species belonging to the herpetological fauna in the National Park of Cilento and Vallo di Diano is not available in the literature and that is why you started a research project.

The surveys have identified 11 species of amphibians.

In areas near to the springs where the water is cooler and where the dense riparian forests provide plenty of shade, live the rare “salamander dagli occhiali” (salamander *terdigitata*), Italian endemism of great interest, the pezzata Salamandra (*Salamandra salamandra*), Apennines and the Frog (*Rana italica*), very common in the park. In stagnant water, both natural and artificial, such as springs, you can find the Italian Triton (*Lissotriton italicus*), a species endemic to central and southern Italy. In still water or weak flow, the frog spawn Dalmatian, the Apennine toad (*Bombina pachypus*) and the Italian tree frog (*Hyla intermedia*). In the old wells and in the ancient local stone cisterns lives the Italian Crested Newt (*Triturus carnifex*). The common toad (*Bufo bufo*) and the Rana of Berger (*Pelophylax bergeri*) and frog Uzzel (*Pelophylax kl. Hispanicus*) attend ditches, streams and temporary pools.

Based on the results of the project on amphibians, Conservation Commission of the *Societas Herpetologica Italica* has identified two sites in the Park AREN (Herpetological Areas of National Importance):

1. AREN ITA063CAM002 in common Piaggine of 800 ha (among the largest in Italy);
2. AREN TAO64CAM003 in the municipality of Ottati of 130 has.

Evaluation of the potential for invasion of Nutria

The nutria, *Myocastor coypus*, is an invasive rodent on larger native of South America, considered a threat to the biodiversity of aquatic habitats of European countries where the species was introduced. The presence of the coypus has long been reported in the contiguous areas of the National Park of Cilento and Vallo di Diano. The European Strategy on Invasive Alien Species (Council of Europe 2003) supports research and monitoring as tools for better knowledge about the ecology, distribution and mode of expansion of alien species, in order to intervene effectively in the mitigation of impacts.

In line with the guidelines of the European Strategy, the Park Authority has initiated a research project to define the distribution of coypus in the protected and contiguous areas, assess the likelihood of expansion in the aquatic environment of the park, and make proposals for measures control and management.

Field survey was carried out to river networks of the Park and contiguous areas. The data acquired in the project represent the first systematic monitoring of alien rodent implemented in the study area and in southern Italy.

Investigations have revealed a good presence on the Sele River, while in Tanagro River, where the population is originated by an accidental release from a farm in the 90s, the presence of coypus is reduced to a segment of river lesser extent and density of individuals is probably low. Moreover, the coypu has already penetrated into the river Calore, but has not yet invaded the fluvial environment closest to the perimeter of the park. The colonization of the Sele is a process recently initiated in 2001 and already known, while the presence in a river Calore is documented for the first time. Information obtained highlight the need to implement a management plan for the rodent to evaluate the possibility of containment / eradication according to the ISPRA guidelines.

Nature Management Plan - Phase IA and IIA

The Nature Management Plan is one of the tools planned by the Park Plan, which aims to coordinate the actions concerning the conservation and management of the natural heritage of the Park. The objectives achieved with the Phase IA of PGN (funded by MATTM) were:

physiognomic maps (scale 1:25.000) of the vegetation with depth typological level IV of the CORINE Land Cover;

census of physiognomic types and their description in terms of floristic tree layer, shrub and herbaceous flora, with notification of emergencies in terms of rarity and vulnerability;

identification and mapping of vegetation emergencies (Habitats Directive Annex I habitats present) to physiognomic scale with particular attention ancient forest.

The goal achieved with the Phase IIA of the Plan were:

Updating of cartographic knowledge and phytoclimatic litomorfologiche (1:25,000) (in the documents of the Park Plan was adopted in the scale 1:50.000);

hierarchical classification and demarcation of the territory of the Environmental Unit;

physiognomic maps (scale 1:25.000) of vegetation, depth typological level IV of the CORINE Land Cover, the relatively continuous areas of the Park;

mapping of vegetation series with its phytosociological study and syntaxonomical of detail (scale 1:25.000) in relation to a wide area including the Park that is contiguous areas;

management plan for natural-scale Environmental Unit.

LIFE Nature "Network Management of SIC and ZPS in the National Park of Cilento and Vallo di Diano" - "Cilento on the Net"

The Park is characterized by a high diversity of natural habitats and species of Community interest, based on the presence of which were established 28 Sites of Community Importance (SIC) and 8 designated Special Protection Areas (ZPS), all coming in area of the Mediterranean biogeographical region. The socio-economic area is characterized by a high level of unemployment and a general lack of interest in nature conservation. This implies a strong impact on natural resources and the need to create forms of consent through a management of the Natura 2000 sites that see local communities as main actors. A proper planning of activities affecting Natura 2000 sites and the realization of urgent measures for the conservation of the elements are at greater risk, therefore, essential to ensuring the long-term preservation of natural values and achieve the necessary support from interest groups. The LIFE project "Cilento on the Net" has the following objectives:

Processing and approval of the Management Plans of the 28 SIC and ZPS 8 included in the territory of PNCVD, grouped according to the prevailing type of environment (total 16 floors: 1 for SIC river; 7 for SIC/ ZPS marine-coastal; 8 for the SIC / ZPS-hill mountain). For drawing up the plan is adopted in a participatory process involving local communities and various stakeholders.

Implementation of urgent measures to safeguard the environment of the dune and pinewood SIC " Scoglio del Mingardo e Spiaggia di Cala del Cefalo," set in its Management Plan.

Implementation of urgent measures for the Protection of posidioneti in SIC "Castellabate Marine Park" and " Punta Infreschi Marine Park ", by the application fields of the buoy for mooring and marker buoys.

Environmental rehabilitation projects in the long term, through actions of forestry and natural starter "ancient forest" of some woods of SIC " Monte Cervati, Centaurino e Montagne di Laurino " .

Monitoring Network of ancient Forests

The ancient forest (old-growth forests), forests have originated through natural succession without having undergone a significant human impact for a long time, ie a period in excess of the normal life cycle of the dominant tree species. The ancient forest in Europe are rare and increasingly threatened with extinction. The Park Plan has identified a number of particular natural forests that can be started to become ancient forest (zone B2 of the Park Plan, reserves oriented to the formation of ancient forest). As part of the 2000-2006 Regional - Integrated Project PNCVD, was expected to start 12 of dilapidated wood forests, addressed through appropriate silviculture.

To support these activities start of some forest ecosystems to a more mature, it was expected the project "Monitoring the network for ancient forest of the National Park of Cilento and Vallo di Diano." This project represents one of the most significant research experiences multidisciplinary nature, ecological and management at national and international scale. After an initial analysis of cartographic documents and aerial photos were found less than 136 areas of monitoring of Tier 1 component relative to the whole of Park Forest, on which analyzes were conducted floristic and forestry. From this initial survey, mainly floristic and structural in nature, have been identified 36 areas of monitoring level 2, falling mostly in the 12 forests subject to action under the Integrated Project in the Park for the start ancient forest, but also in other areas characterized by the presence of ancient forest or close to the age. On these areas a multidisciplinary group of researchers has produced interesting elements that contribute significantly to better clarify the role and significance of various structural and functional indicators. In particular the 36 monitoring areas of level 2 are carried on the following investigations:

- diametrical classes;
- necromass;
- Checklist vascular flora,
- Survey phytosociological
- Checklist saproxylic fungi;
- Checklist lichens;
- Checklist invertebrates;
- Checklist vertebrates

The scientific expertise of the working group have produced both targeted information to formulate the "Guidelines for the planning of the bioecological and structural reorganization" that extraordinary scientific achievements such as the detection of 750 vascular species, reporting 19 new lichens for Campania, 5 and 25 macromycetes bryophytes new for Campania. Even more significant in terms of taxonomic investigations in some groups of animals Cilento.

Feasibility studies for the establishment of Marine Protected Areas (MPAs) of Santa Maria di Castellabate and Costa Infreschi and Masseta

The feasibility study has highlighted the high environmental values in both areas, which justify the establishment of marine reserves, but also the threats to species and habitats are subjected. A Castellabate, lists wildlife products are rare or little known to the Italian waters such *Alvania colossophilus*, *Asperarca nodulosa*, *Crisilla semistriata*, *Diplodonta apicalis*, *Marshallora Adversa*, etc.. Of particular interest are formed by bioconcrezioni vermetide *Dendropoma petraeum* that surround the island of Licosa that form the reefs of the northern Mediterranean Sea. Particularly popular is the rare alcionario *Maasella edwardsi*. Even in Costa Infreschi are rare or little known to the Italian waters such *Dizoniopsis micalii*, *Granulina boucheti*, *Monophorus thiriota*, etc.. Large and dense seagrass *Posidonia* cover much of the depths of both AMP. In Costa Infreschi is widespread enough to signal the presence of protected species in *posidioneti* *Pinna nobilis*, and in particular a "field" is particularly rich in this bivalve in Porto Infreschi.

On the basis of studies quetsi the Ministry for the Environment, Land and Sea with the Decrees of 2009 established two marine protected areas and has approved the regulations.

Definition of mooring areas and anchorages with disciplinary Marine Protected Areas in Castellabate and Costa Infreschi and Masseta.

The management and the parking of the boats within the AMP is a complex problem that requires special attention to ensure both the purpose of preservation of tourist use. In general, the regulation distinguishes un'AMP the anchor (the use of its anchor by a naval unit) from mooring to buoys, that is, structures set up by the Consortium. The choice is motivated by the different impact that these solutions are for the purpose of environmental conservation. In principle, the anchor is in itself an element of alteration of the seabed. The disturbance, due to the impact of the anchor and the abrasive action of the chain, covers both the structure of the bottom is the community present, with an intensity that varies as a function of the vulnerability of the substrate (eg. Posidonieto, coralligenous). So anchorage areas must be defined with precision, depending on how easy it can be controlled, both for their nautical characteristics (type of bottom and its resilience, shelter from prevailing winds, shallower).

In reference to the directives of the Protocol of Sustainable Marine, the anchor may be permitted in Zone B and C, consistent with the requirements for protection of waters, well outside of sensitive areas, which house prairies of oceanic Posidonia, other seagrasses, coral and other valuable biocoenosis. To this end, the managing body, on the basis of ministerial directives, it has been on the thematic maps of the seabed and use of marine territory, where they reported the "sensitive areas", in which prohibit anchoring and install mooring fields, and areas in which the anchor may be allowed (depths inert even at near the coast), depending on the characteristics of the coast and tourist use.

The project was conducted in co-financing with the Department of Environmental Sciences, University of Naples Parthenope and was aimed at providing services related to the following points:

- Identification / definition of mooring areas;
- Identification / definition of anchorage areas;
- The design of scientific / informative / informative related project.

For the AMP Castellabate were identified 7 areas for anchorage and 5 areas for mooring of pleasure craft. They produced 11 bathymetric maps (scale 1:5000 and 1:10000) and 11 bionomics maps (scale of 1:7000 to 1:10000). Following a survey of all activities related to the use of marine territory, have been produced, in addition, 5 land use maps (scale 1:14000 to 1:20000), showing the dive sites, ports, the concession areas for mooring, the concession areas for plants, the presence of existing buoys. All data were geo-referenced. The underwater landscape of the AMP was characterized by biotic communities of algae Fotofile (AP), by Ben Fine Sand Biocoenosis Calibrate (SFBC), and the dominant Biocoenosis of Posidonia oceanica.

It is present in approximately 60% of the seabed of the AMP investigated, of which about 75% consists of plains with coverage of over 50% (HP) and 25% from *Posidonia* sparse tufts or scattered spots (semipraterie, HHP) . In light of data collected, to allow a correct use of the shoreline, consistent with the protection requirements of the seabed, were also made 5 synthesis maps land use.

In the AMP Costa Infreschi and Masseta, to find pools of water suitable mooring and anchoring, were made in total, 95 thematic maps based on a sliding scale heterogeneity of the area: 17 bathymetric maps (1:1000 - 1:5000), bionomiche 16 cards (1:1000 - 1:3500), 20 maps on the use of marine territory (1:1000 - 1:6000), 8 maps of the anchorage areas (1:2000 - 1:4000) and 14 maps of the mooring areas (1:5000 - 1:6000). Finally, to avoid creating conflict between the mooring areas and other uses of the marine territory, only 20 were actually "maps usability" (1:1000 - 1:6000) offering an optimal synthesis of various types of use of the site. The areas of anchoring identified in the AMP are 10 in total. Were identified, 58-point mark, distributed in 14 areas of mooring.

The results of the project were exhibited in the recent 43 th Congress of the Italian Society of Marine Biology, held in the period 4 to 8 June 2012 in Marina di Camerota, the AMP places of Costa Infreschi and Masseta, and organized by the Park Authority in collaboration with the Department of Environment Sciences, University of Naples Parthenope.

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Brief description of on-going research and/or monitoring activities.

Abiotic /Biotic research and monitoring:

ONGOING BIOTIC RESEARCH

Census and monitoring of Agnatha and Crayfish

The Nazional Park of Cilento and Vallo di Diano is extremely diversified depending on the availability aquatic habitats: mountain sectors, hilly, lowland and a wide coastal areas. In the hilly and lowland zones fish species and typical agnatha of the temperate waters are located. In a previous research, carried out in 2006 on the agnatha and crayfish, the presence of a unique cyclostomata species, the stream lamprey (*Lampetra planeri*), was found and the presence of the crayfish (*Austropotamobius pallipes*) in the Bussento river basin has been evidenced.

In continuation with how much already has been developed, with the present project the “Ente Parco” means to verify the possible presence and distribution of other agnatha species reported in historical times, to better define the distribution of the stream lamprey *Lampetra planeri* and the crayfish *Austropotamobius pallipes*. Moreover, an analitical study on the biology of stream lamprey is in progress to define the most suitable measures of management and preservation of this species.

Distribution and Monitoring of golden eagle (*Aquila chrysaetos*) in the Parco Nazionale del Cilento e Vallo di Diano

The Golden Eagle (*Aquila chrysaetos*) is reported in the Annex I of Birds Directive and in the Italian Red List as vulnerable species.

In the Park the Golden Eagles have been observed on the Alburni Mountains, in the Ravine of the Calore Lucano, on the Motola mountain and on the Gelbison; but it generally deals with immature individuals in search for new territories.

On the Cervati Mountain a nesting couple was reported since 80's and later, but since the observations are irregular and carried out from different ornithologist, there is no accurate data that can be affirmed that they are the same individuals, not even the continuity of the nest-building is not sure.

The project wants to study the golden eagle distribution state in the park and to carry out the monitoring of the two eagles mates of the Cervati Mountain.

Distribution of deer (*Cervus elaphus*) and italian roe-deer (*Capreolus capreolus italicus*) populations in the Parco Nazionale del Cilento e Vallo di Diano

The deer and roe-deer are respectively extinct in the territory of the Park in the years twenty and fifty of last century. Because of the herbivorous habits, their presence can be important for the correct function of the forest coenosis and the mountain grasslands.

Beginning from 2001 the “Ente Parco” has started a reintroduction program of the two ungulate species, and monitoring activities have been carried out on the founders individuals by means of radio-tracking until 2006.

To distance of some years from the reintroduction it is necessary to carry out census activities of two ungulate populations.

Census and monitoring of Coleoptera (Carabidae, Buprestidae e Cerambycidae) and Heteroptera (Coreoidea e Pentatomoidea) of the Alburni Mountains

The actual state of the entomofauna knowledge of the Parco Nazionale del Cilento e Vallo di Diano is very scarce, and so much above those of the Alburni mountains. There are historical reports going up back to Oronzio Gabriele Costa and his child Achille but these reports are old of almost 140 years and quote with obsolete names. Moreover historical spot informations going up back to 1980-90 are mainly reported for some families of Coleoptera .On the Heteroptera practically nothing is known. The project means up to date the entomofauna knowledge of Coleoptera (Carabidae, Buprestidae and Cerambycidae) and Heteroptera species (Coreoidea and Pentatomoidea) of the Alburni Mountains, with particular reference to the species listed in the Annex of the Habitats Directive, in the Index of the protected fauna of Italy, in the Red Lists.

Census and monitoring of terrestrial malacofauna of Alburni Mountains

The knowledge on the terrestrial malacofauna of the Parco Nazionale del Cilento e Vallo di Diano and so much above those of the Alburni mountains are practically almost nonexistent. In all Campania region, papers on check-list of Capri Island and Parco Nazionale del Vesuvio are known, from the rest there are only historical reports, of almost 150 years old, concerning to the most common species and quote with obsolete names. In the Alburni territory only the endemism of Italy, *Siciliaria ernae* Fauer, is known, a threatened species whose distribution can be verified through a special search of field. The project means up to date the malacofauna knowledge of the Alburni Mountains, with particular reference to the species listed in the Annex of the Habitats Directive, in the Index of the protected fauna of Italy, and in the Red Lists.

Conservation of italic hare (*Lepus corsicanus*) in the Parco Nazionale del Cilento e Vallo di Diano

The italic hare (*Lepus corsicanus*) has been recently ranked as endemic species of southern Italy (Palacios, 1996; Trocchi, 1998). Among the population distributed in peninsular Italy the most numerous seems to be present in the Parco Nazionale del

Cilento e Vallo di Diano. Despite the importance of such species as endemism, its ecological characteristics are less known. Moreover, before the institution of the Park, in the same areas where the italic hare is known to be, the European hare individuals have been introduced to an hunting purpose and they compete with the autochthon populations.

For this reason from some years the “Ente Parco” has carried out a series of studies on this species. The main achieved results are:

1. Distribution of autochthon and allochthon population in the territory of the Park;
2. Estimation of the numerical consistence;
3. Habitat description;
4. Environmental fitness of the Park territory to the presence of italic hare.

In continuation with how much already develops, the project intends to update the knowledge on the distribution of the species and to realize a reintroduction in suitable areas.

Monitoring of the Audouin's gull *Ichthyaetus audouinii*

The Audouin's gull *Ichthyaetus audouinii* is a rare species restricted to the Mediterranean basin and the western coast of Saharan Africa. This species, unlike many large gulls, rarely scavenges, but is a specialist fish eater, and is therefore strictly coastal and pelagic, so its presence is an indicator of good quality of coastal habitats. Until to 2002 *I. Audouinii* nested along the park's coasts. Currently, the presence of the species during the breeding season is confirmed in the Park only for Licosa Island, where, however, the species does not breed, presumably because of anthropogenic disturbance. The project involves annual monitoring activities to establish abundance of the breeding population and reproductive success. Other goals of the project are:

- determine the origin and dispersion of individuals that are in the protected area by the CMR method, Capture Mark Recapture;
- identify the threatening factors in the area of presence of the species that can cause the lack of reproductive success;
- apply management measures to minimize the threatening factors.

Conservation of otter (*Lutra lutra*) in the Parco Nazionale del Cilento e Vallo di Diano

Since 2001 the “Ente Parco” is committed to conservation of otters. In a first phase, a large-scale research on otter ecology and distribution in South Italy was carried out, focusing on four relevant topics: geographic distribution, trophic ecology, habitat modelling and space use.

In 2009, after the first cases of otter road kills, the Ente Parco was motivated to undertake new research project and conservation activities. The ongoing RECAL project (RECOVERY and post-mortem Analysis of otters *Lutra lutra*) is aimed at improving the recording, recovery and post-mortem analysis of otter carcasses in the park and its buffer zones. Another project aimed at analysing anthropogenic pressures and impacts on otter habitats and produced guidelines and good practices to improve river habitats management. Besides, an ongoing project aimed at developing best

monitoring protocols for, and indicators of, conservation status of otters at different spatial scales.

Conservation of wild cat (*Felis silvestris*) and marten (*Martes martes*)

The wild cat (*Felis silvestris*) and marten (*Martes martes*) are two focal species of forest habitats. These kind of habitats are largely present in the SCI of the park and their protection can be enhanced through the acquisition and use of ecological information concerning the focal species, thus contributing effectively to the management of Nature 200 Network. The project aims to:

- documenting the presence of wild cat and marten in the forest habitats in 3 contiguous SCI;
- quantify the relative presence of the wild cat and marten in terms of proportion of habitat occupied in the study area;
- define requirements and habitat preferences of two species in the study area relative to the structure of the vegetation, the landscape and microhabitats features and anthropogenic disturbance;
- understanding the factors that limit the distribution of the wild cat and marten.

Location and description of trees of landscape and environmental interest and their insertion in thematical and natural trails for the development of the Parco Nazionale del Cilento e della Valle di Diano territory.

The identification, the inventory and the safeguard of trees in a specific landscape, of environmental and cultural interest represents one of the main priorities of agricultural and forest landscape preservation, as indicated in the priorities of the European Community regarding the safeguard of rural and forest landscape. Besides their productive function, trees can provide other services not readily resourced financially, i.e. hydrogeological and soil protection, biodiversity conservation improvement of air quality, and touristic and recreational value.

Moreover, rare species and those with a very limited areal expansion on the national territory, can become an important landscape marker. An example worth noting for the Parco Nazionale del Cilento e Vallo di Diano is the presence of some specimens of *Quercus ithaburensis* Decne *subsp. macrolepis* (Kotschy) Hedge & Yalt located in the promontory of Punta Licosa and Punta Tresino. The location, the inventory and the safeguard of this arboreal patrimony can represent an opportunity for the exploitation of the Park territory.

The aim of the project is therefore to locate and select tree specimens on the basis of quantitative and qualitative parameters with the intent to optimize their management, to control the health state and to plan the future interventions both technical and economical.

Analysis and characterization of bryophyte coastal vegetation of the Parco Nazionale del Cilento e Vallo di Diano

The Bryophyte are small plant but in Mediterranean ecosystems they can play an important ecological role as pioneer species able to recolonize areas affected by various disturbance factors. Recent studies evidenced the important role played in

post-fire recovery of burned soil affected by high intensity fires. Thanks to their simple organization the bryophyte can be employed as bioindicator able to show the various changes of environmental and microenvironmental conditions.

The vegetational study, in synergy with the analysis of the floristic component, is requested to emphasize the vegetational emergencies in the area of the protection of biodiversity and for applications as a tool of the natural state of the territory, the degree of human impact and environmental quality.

The aim of this project is to study the bryophyte communities of coastal ecosystems of territory Park in terms of synecological, synchorological and synsystematic point of view. The ecological analysis of bryophyte communities it is also required through the use of "life forms", species reproductive capacity and/or ecological indices recognized at international level or properly created as a predictive tool for the evaluation of the degree of human activity.

Check-list of macromycetes of the Parco Nazionale del Cilento e Vallo di Diano.

The macrofungi represent a significant component of the terrestrial ecosystems, they shown a high level of biodiversity and play a key role in the functional processes of ecosystems; in fact, they play a fundamental role both in the decomposition of the organic matter and as regulators of the plant-soil system (Dighton, 1995).

For this reason the macrofungi have become important indicators of biodiversity and they are used to estimate, for instance, the conservation value of a forest (Crites and Dale, 1998; Boddy, 2001; Rolstad *et al.*, 2002; Gilg, 2005). In this respect, it seems evident that there is the necessity to look into the implement knowledge of the fungal biodiversity in the Park territory.

In fact, at the present, the knowledge of the macromycetes flora of the Parco Nazionale del Cilento e Vallo di Diano is fragmentary; it has preliminarily been investigated through sporadic studies, primarily carried out in autumn periods and it represents about 1/3 of the macromycetes Campania flora and, presumably, a lower level of fungal biodiversity in comparison to the elevated potentiality of the Park territory.

The aim of the project is to improve the knowledge on the macromycetes flora of the Parco Nazionale del Cilento e Vallo di Diano and to exploit the Park patrimony especially in relationship to the entities of particular phytogeographical interest.

Check-list of lichens of the Parco Nazionale del Cilento e Vallo di Diano

The lichens, symbiont organisms produced by algae and fungi association, represent a significant component of terrestrial ecosystems and for their biological and ecological property they constitute important biondicators of the environment quality.

The knowledge on the lichens flora of the Parco Nazionale del Cilento e Vallo di Diano result most scarce.

Recently some information have been acquired through the study of "monitoring to the net of the old growth forests of the Parco Nazionale del Cilento e Vallo di Diano" (Blasi 2008) that allowed the identification of 159 lichens taxa (20% of the known lichens heritage for our region) of which 19 new Campania species and of particular rarity for the Italian territory.

The results of these researches don't represent the actual level of lichens biodiversity of the Park. This project means to implement the knowledge on the lichens flora of the Parco Nazionale del Cilento e Vallo di Diano and to improve its heritage especially in relationship to the entities of particular geobotanic interest.

Environmental monitoring of microsites in which grows *Primula palinuri* Pet. and study of the first phases of his life cycle

The protection strategies of the rare and vulnerable species are often limited to identify the existing populations and to limit the anthropic impact on the sites in which they survive. Nevertheless, the lack of information on the ecology and on the reproductive biology of the single vulnerable species could reduce, even anull, the finality of these protection actions.

Primula palinuri Petagna is one of the most rare italian endemism and is the species symbol of the Parco Nazionale del Cilento e Vallo di Diano.

In recent times, for instance, one of the main *Primula palinuri* sites has been subject to runoff for natural evolution of the coastal erosion phenomena. This event has lead to the demand of a ready management plan, and eventually the reintroduction, of this species. At the same time it has underlined the great lack of information on the biological and ecological characteristics of this primula. The knowledge of these data is of a basic importance for the Ente Parco both to commission and to evaluate any intervention of protection and maintenance of its symbol species.

The main goals of the project are:

- 1) Study of the phases of *Primula palinuri* reproductive cycle;
- 2) Environmental characteristic of microsites in which this species grows;
- 3) Environmental parameters suitable for its survival;
- 4) Realization of an appropriate action programs for the maintenance of this species and the management of the areas in which it is present.

Detection and estimation of preservation state of Parco Nazionale del Cilento e Vallo di Diano rare vascular species.

The individualization and evaluation of the rare plant species preservation state of the Parco Nazionale del Cilento e Vallo di Diano represents a fundamental knowledge base to ready the most suitable measures of conservation. For this purpose the "Ente Parco" is carrying out a study and written a list of 231 vascular plant, particularly rare (8 Ferns, 1 Gymnosperm, 132 Angiosperm Dicotyledon, 92 Angiosperm Monocotyledon) and present within the territory of the Park.

For each of these entities a critical analysis of the bibliographical data has been carried out with the purpose to evaluate the knowledge state on their distribution in the territory of the Park. For the entities held of great interest the distributive maps has been compiled related to 91 species and verified, through sampling fields, the actual distributive data related to the following critical species: *Androsace mathildae* Levier, *Athamanta ramosissima* Port., *Dianthus rupicola* Biv. Rupicola, *Epipogium aphyllum* Sw., *Equisetum variegatum* Schleich. ex Weber & D. Mohr, *Genista cilentina* Vals., *Hippuris vulgaris* L., *Limonium remotispiculum* (Lacaita) Pignatti, *Otanthus maritimus* (L.) Hoffmanns. & Link, *Primula palinuri* Petagna, *Asplenium petrarchae*

(Guérin) DC.; *Cosentinia vellea* (Aiton) Tod.; *Buxus sempervirens* L.; *Convolvulus lineatus* L.; *Crocus imperati* Ten.; *Erica scoparia* L.; *Iberis semperflorens* L.; *Isoëtes histrix* Bory; *Minuartia moraldoi* F. Conti; *Orchis pallens* L.; *Paris quadrifolia* L.; *Platanus orientalis* L.; *Pteris cretica* L.; *Quercus ithaburensis* Decne. *macrolepis* (Kotschy) Hedge & Yalt.; *Rhamnus pumila* Turra.

Analysis and characterization of riparian vegetation of Parco Nazionale del Cilento e Vallo di Diano

The channel net is the vascular system of a landscape assuring the essential vital flow of various ecosystems conservation and evolution. The rivers carry out an important corridor function since water moves together with sediments, mineral salts, animals and plants (seeds or propagules). The hydraulic and biological function of a stream depends on the good conservation state of riparian vegetation.

The knowledge of vegetation types, their floristic properties and syntaxonomical characters are a basic indication for habitat management.

The ongoing studies constitute the base for biological monitoring river and to act as support for further analysis on water quality in accordance with water European Directive (Water Frame Directive –WFD- 2000/60/CE), the main regulation instrument for a suitable management of water resources and related ecosystems.

The main goals of the project are:

1. Map of land use and vegetation types with a scale 1:5.000 according to CORINE Land Cover (for natural and seminatural vegetation with 4° and 5° level).
2. Phytosociological map of riparian vegetation with a scale 1:5.000;
3. Habitat map with a scale 1:5.000 according to CORINE BIOTOPS;
4. Environmental quality map in terms of vegetation with a 1:5.000 scale.

Metabolic characterization of olive cultivar

The olive is a fruit plant spread throughout the world, especially in the Mediterranean basin. There are many varieties of olive, some of which are characteristic of specific areas. Its fruits are used mainly for producing oil. Olive oil is an essential ingredient of Mediterranean diet. The high content of oleic acid in olive oil and the low consumption of saturated fatty acids were considered key factors for the benefits of mediterranean diet. In fact, oleic acid is present in high amounts in other foods and, therefore, the percentage of oleic acid in the Mediterranean diet is only slightly higher than that of other diets. In the olive fruit there are other minor components (secondary metabolites) that, due how olive oil is made, are present in the oil. Among secondary metabolites, the phenolic components makes the plant resistant to infestation by fungi, bacteria and herbivorous insects, so the cultivars richest in phenols can be grown by limiting the use of pesticides. The selection of varieties rich in these components have occurred over the centuries thanks to the work of local growers. Unfortunately the current trend in the territory of the park is to use non-native varieties of olive trees that are more productive and more profitable economically. These allochthonous varieties are replacing old plants with native varieties of olive trees, causing a loss of agricultural biodiversity. A recent research has showed that the olive oil in the park is

particularly rich in phenolic compounds that are responsible for its antioxidant and free radical scavenging activity. But this study was conducted on oil made from several varieties

The aim of the project is to identify the metabolic profile of each variety of olive grown in the territory of the park, with particular regard to phenolic compounds. The study is conducted not only on the fruit but also in other plant organs like the leaves. The metabolic component is put in relation with the phenological stage of the plant, altitude, exposure, soil characteristics, etc. to establish if the concentration of phenols is influenced by plant-environment relationship.

Recovery, preservation and exploitation of autochthonous grapevines

The increasing economic importance of the wine and the approval of consumer tastes toward wine with very specific characteristics has led the production system to give priority to those easy-to-market varieties, reducing the interest for the minor varieties. This dynamic has led to a drastic reduction of Italian grapevine varieties, resulting in the abandonment of cultivation of local varieties with high environmental adaptability, and thus causing the erosion of Italian ampelographic diversity and the consequent loss of agricultural biodiversity.

The aim of the project is to identify and characterize the local minor varieties of grapevines in the park. Until now, through the use of molecular genetics, 21 grapevines with unique genome have been identified. For the *ex situ* conservation of these unique varieties, a field collection has been made in one of the Ente Parco property.

ONGOING ABIOTIC RESEARCH

Study, Census and valorization of Geosites and Master plan of landscape

The National Park of the Cilento and Vallo di Diano has provided itself with a very effective instrument of management of territory called the Plan of the Landscape.

The ambitions pointed out by the Plan of the Landscape of the National Park have been defined comparing two different aspects, one physical-geologic-morphological-naturalistic and the other historical and about human settlements.

Homogeneous portions of territory have been individualized from the point of lithological, geomorphological, stratigraphical and hydrographical, correlated with important and well defined structural elements. Therefore starting from the map of the "Subsystems of Landscape" produced for the Plan of the Park and made through a process of hierarchical classification of the territory, the zoning has been integrated and qualified with further information such as the systems of historical settlements in their articulation (routes and centers) in relationship to the morphology, to the historical matrixes and the relationships with the Cilento territorial context; the systems of meaningful historical-archaeological assets qualifying the area at a local and territorial level; the cultural events linked more or less to the tradition, testimony of the cultural vitality of the territory.

The landscape areas so defined underline as the forms of anthropization is tightly tied to the physical morphological characterization of the territory. Subsequently the single

geosites have been individualized, divided and encoded for landscape areas, to which has been attributed both the geologic interest and the "Importance." As it concerns this last parameter "Importance" four hierarchical levels have been defined:

- **Principal:** geosite of particular geologic interest, both as uniqueness/representativeness at European level, and as didactic-scientific value;
- **Focal:** geosites to which is associated a real or potential fruition from the point of view of the geo-tourism. They are geosites already equipped with structures and explanatory paths or on the way of geo-touristic structuring.
- **Complementary:** geosites, to which it is associated the presence of an archaeological site or human settlements of great historical-architectural value.
- **Secondary:** geosites of geologic interest at national or regional level.

Finally, for every ambit of landscape, a map of synthesis has been prepared showing the peculiarities of the each geosites

Various categories of geosites were distinguished including the most common ones (stratigraphical, geomorphological, palaeoenvironmental, structural, hydrogeological, palaeontological) together with those with particular panoramic (scenic sites) or economic value (ancient mine) (Santangelo et al., 2005; Aloia et al. 2007). On the basis of literature analysis and the personal observations, 160 geosites were identified: 136 geosites are included within the borders of the park whereas 24 are situated in the neighbouring areas. The latter ones have been included owing to their strict connection with the structures inside the park .

Among all geosites, 43% show stratigraphical and palaeontological interest; they are located on the Mesozoic carbonate mountains and in the hilly coastal areas of the Park. More specifically, this group of sites includes the sole Jurassic formation with Ammonites in the Campania Region (Cocco, 1971) and the unique example of Plattenkalk level of middle Albian age with a macrofauna of fishes and Decapoda Crustacea (Bravi and Garassino, 1998), together with Pietraroia level in the Matese Mountains in an extra-alpine Region. In the relatively lower relieves, such as Mount Gelbison (1700 m) and Mount Stella (1100 m), Miocene turbiditic successions with clearly visible sedimentary structures of deep-sea environments (e.g. Bouma sequences, traces of ichnites, slumps and olistostromes) are well exposed.

The geomorphosites, subdivided in structural, karst and coastal, represented the 48% on the total. In fact, in the National Park are found: karst features (active and fossil caves of Alburni Mountain like Pertosa and Castelcivita; coastal caves); different kind of gorges (as the spectacular examples along the Calore, Mingardo and Bussento rivers); cuesta ridges, fault scarps and fault-line scarps (Motola and Vesole-Chianello mountains); coastal landforms (as the wide terraced surface formed during the last million of year, that is middle and late Pleistocene due to eustatic oscillations; sea cliff with notches).

Hydrogeological geosites form only a small percentage (3%), however they well represent a good expression of the great aquifers of the National Park. These sites are: the Auso spring with a spectacular fall, the Faraone's Fistole springs with its significant discharge, Sammaro spring in the superimposed gorge, and the Capodifiume springs connected to the Paestum Travertine.

At last, a 6% indicate sites with panoramic or scenic value, for example, the view of the northern side of Alburni Mountains from the Vallo of Diano, the view of the southern side of Vesole - Chianello Mountain from the Sele Plain and the coastal landscape of Baia Arena and Ripe Rosse cliffs from Ogliastro Cilento.

For this reasons, in 2010 the National Park of Cilento and Vallo di Diano in 2010 was reconized as a member of the European Geoparks Network (EGN).

Plan for Soil and Water Protection

The plan analyzes both the main rivers of the park (Alento, Lambro, Mingardo Bussento and Heat), that the rivers secondary.

This work has helped to achieve a unified vision of the "vascular system" of the territory of PNCVD, and to assess the quality of surface waters (rivers with delivery to the sea).

This type of analysis has allowed to define the quality status of rivers and making a systematic assessment of the state of alteration of the river. This evaluation was performed by analysis of high-resolution orthophotos available (dated 2005) and supplemented by field inspections targeted, even when it was not based on structured methodologies and procedures, has effectively evaluated the river areas and expressed a synthetic based primarily on:

- condition of vegetation cover of riparian areas and adjacent spaces (presence and structure of plant communities)
- issues of artificialisation and tampering of the river
- degree of urbanization and human settlement.

We conducted a study on the state of tampering with river courses analyzed, to assess the interference that the hydraulic exercise in respect of the river ecosystem. Starting from the previous census operations, and updating them with photo interpretation and field verification of targeted, have been identified all the hydraulic elements, to define for each river basin, the number and frequency of the works listed, the stretches of rivers regimentati.

Finally, the guidelines have been prepared for the implementation of natural purification and quantitative protection of water resources.

Integrated Coastal Zone Management

This plan was carried out through three stages:

Preliminary survey phase: acquisition of information and general information on the topics addressed in the Sector Plan for the Soil and Water Protection, available from organizations, government, research institutions and associations.

Finding phase specific, targeted in particular (for geological and environmental aspects), verification of data acquired.

Phase of critical analysis, integration and synthesis of knowledge acquired

Given the heterogeneity and breakdown of the skills and information base, in this phase was provided integration and homogenization of information acquired in the previous step.

The plan was structured so as to achieve two objectives:

1. definition of guidelines for integrated coastal zone (Integrated Coastal Zone and coastal erosion, Model of address for the sustainable development of the beaches PNCVD, Importance of beaches: the need for protection and enhancement, load capacity, Lines of action for sustainable development of the beaches, Guidelines for a sustainable tourist ports, Guidelines for the protection of marine waters in coastal).
2. good practices and guidelines for integrated coastal zone (Good practice for the realization of ecological beaches, Guidelines for environmental management of whale strandings plant, Guidelines for the construction of mooring fields for boating, Guidelines for the protection quantitative water resources in the coastal area.

To support this work there are some scientific publication:

ALOIA A., GUIDA D., IANNUZZI A. & LAZZARI M. (2006) – Guida geologico-ambientale del Monte Gelbison - Novi Velia. Edizioni del Centro di Promozione Culturale per il Cilento, p. 176.

ALOIA A., GUIDA D., IANNUZZI A., LAZZARI M. & SIERVO V. (2007) – Guida al patrimonio geologico-ambientale del Monte Gelbison, quale premessa per l'istituzione del "Geoparco del Cilento" - Associazione Italiana Geologia e Turismo. Atti del 3° Congresso Nazionale, Bologna marzo 2007, p. 28-35.

ALOIA A., BURLANDO M., DE VITA A., FIRPO M., GUIDA D., QUEIROLO C., TONI A., VACCHI M., VALENTE A.-(2010) "La divulgazione del patrimonio geologico attraverso i sentieri tematici: le esperienze del Parco Nazionale del Cilento e Vallo di Diano e del Parco del Beigua – Beigua geopark" Atti del Convegno Nazionale "Il Patrimonio Geologico: una risorsa da proteggere e valorizzare" -29-30Aprile Sasso di castalda (PZ)

ALOIA A. et ali 2010 Dosiier di candidatura per la Rete dei Geoparchi Europei

ALOIA A., DE VITA A., GUIDA D., TONI A., VALENTE A.-(2010) "la geodiversita' del parco nazionale del cilento e vallo di diano: verso il geoparco Atti del Convegno Nazionale "Il Patrimonio Geologico: una risorsa da proteggere e valorizzare" -29-30 Aprile Sasso di castalda (PZ)

ALOIA A., GUIDA D., TONI A., VALENTE A. (2010) "I geositi del Parco Nazionale del Cilento e Vallo di Diano: le forre fluvio carsiche" Campania Speleologica 2010 - Atti del II Convegno Regionale di Speleologia 3 - 6 giugno 2010, Caselle in Pittari (SA)

ALOIA A., DE VITA A., GUIDA D., TONI A., VALENTE A. (2010) "National Park of Cilento and Vallo of Diano: geodiversity, geotourism, geoarchaeology and historical tradition" 9th European Geoparks Conference 2010- 1-5 October- Lesvos Greece

ALOIA A., DE VITA A., TONI A., (2011) "Cilento and Vallo di Diano Geopark a territory to be discovered." European Geoparks Magazine. Iusse 8- published by Natural History Museum of the Lesvos on behalf of the European Geoparks Network

ALOIA A., DE VITA A., TROIANO A., (2011) "Il geoparco del Cilento e Vallo di Diano" Semestrale delle aree protette mediterranee- Giannini editore

ALOIA A., DE VITA A., POSITANO M.P., (2012) "Cilento and Vallo di Diano Geopark:Elea-Velia an Unesco geoarcheological sitea" European Geoparks

Magazine. Issue 9- published by Natural History Museum of the Lesvos on behalf of the European Geoparks Network

Socio-economic research:

The “Marchi d’Area” Project – Instruments for employment opportunities in the agro-food sector.

The Marchi d’Area Project has identified opportunities for the development and growth of marginal local systems precisely in the enhancement and promotion of typical agro-food production and the re-launching of the agricultural sector and other related sectors (rural tourism and typical crafts). It is a multidimensional Project whereby agriculture and related economic activities and the protection and enhancement of the environment and the territory act as drivers for fragile economies like mountainous and rural ones, which are increasingly characterised by phenomena like “social desertification”. The analysis carried out with local stakeholders has revealed the wide range of agricultural activities and agro-food and craft production. This priceless heritage can be used to preserve their biodiversity and protect the knowledge of their uses, customs and traditions. The Marchi d’Area Project aims to create sustainable local development through the use of a collective trade mark that makes these typical products, the companies and the territory clearly identifiable and visible, thereby promoting the beauty of the natural landscape and the facilities for hospitality and fostering a series of actions intended to encourage employment and the creation of new professional abilities.

This will be a Community collective trade mark designating geographical origin in accordance with art. 64 Reg. EC 40/94 and will have a sign and indication that in trade can designate the geographical origin of the products and/or services.

The mission of this collective trade mark is to promote and support the products and activities in a particular geographical area which will be identified by the trade mark itself. In particular, the trade mark must

- enable consumers to identify products and activities that come from the area immediately and provide a guarantee of their provenance;
- help farmers, and SMEs in the food and tourism sector to use the trade mark to differentiate their products and services and guarantee complete respect for the laws and code of regulations in force;
- help retailers and distributors in the area to differentiate local products and be qualified on the basis of the percentage of these products that are sold or used;
- help actors in the area to create quality in the local system as a whole, which can be immediately transferred to its products and services without restrictive production regulations but based on virtuous behaviour, the reputation of operators and the quality of the environmental resources.

In this sense the trade mark can be a very important communication tool for the territory's development strategies and its products and services as well as enhancing the reputation of the firms that join the project. Its principal features are:

- a collective trade mark that can be used by different companies that share not only the same geographical location but also the formal and informal rules that make up their specific quality. Social cohesion, the basis for a territorial identity, can be recreated through the use of collective instruments;
- a pluri-sectorial trade mark, for different products and services, that will integrate relational networks that would otherwise be unable to create synergies for the promotion of the territory;
- a traditional communication tool that aims to create relations between the area it identifies and the different segments of the market, guaranteeing a clear identity for the products and services offered;
- a marketing tool, which leads the entrepreneur to consider not only the production process (typical of micro enterprises) but the whole life-cycle of the product, and in particular customer satisfaction;
- an instrument for the continual updating and improvement of company performance in terms of customer expectations which become part of the code. The use of the trade mark allows for information-sharing between entrepreneurs to identify locally specific solutions for the introduction of European, national or regional laws;
- an instrument for behaviour practices based on internal self-control mechanisms of the users which reduces significantly the costs normally associated with this activity.

The strategic aim of the Marchi d'Area Project – Instruments for employment opportunities in the agro-food sector is, therefore, the creation of a transferable model of services that can concretely foster development from the most distinctive features of a territory and thereby determine a real increase in the employment and employability levels.

It is a model providing services, as the project intends to create local development and employment from a promotion of typical territorial products, linked to a range of high value added recreational, tourism and environmental services that can promote high quality local products and support their purchase by an increasing number of consumers. Two types of services are available following a standard process of analysis – intervention – assessment:

- services for the development of the productive sector: these are implemented with the support of tools for territorial analysis and the assessment of the potential attractiveness of an area, models for optimising organisation, a “regulatory observatory” for the definition of common regulations and the use of the trade mark, a model for the management of production processes in the agro-food sector for hygiene and health assessment, checks and supervision;
- services for the development of human resources: these are implemented with the support of instruments for the mapping of employment opportunities, a model of analysis of professional skills that are coherent with the vacancies advertised in the National Job Centres, a model for training (classroom activities, field experiences, distance learning), a catalogue of training opportunities in the agro-food sector, a model for Technical Assistance services.

- “replicable” as it follows the typical methodology used by Italia Lavoro; if the experimented model should prove to be valid, it can be applied in other territorial areas apart from the pilot ones. The services that will be available can be used by all the partners and replicated in similar public and private contexts.

LIFE ENVIRONMENT - Project TIRSAV PLUS: Technologies innovative for the recycling of olive residues and of waters of vegetation.

The LIFE TIRSAV, prepared by the Park Authority, was approved by the European Commission decision issued on October 25, 2005 and authorized to co-financing amounting to € 1,061,380.00, (the extent of 30%). Such project has the objective of reducing drastically the impact relative environmental to disposal to the ground Sanitation Services olive oil industry, through the ideation of a process and the consequent realization of a recycling plant of virgins olive residues and of vegetation waters to the production of soil improvers organic (compost) by the recovery of olive residues humid and Waters of vegetation.

MATERRA Project: Line Park

The Project Line Park was established in 2002 as one of the publicity events and support the development of female entrepreneurship in the PNCVD MATERRA carried out under the Project, sponsored by the Park Authority - in partnership with local authorities and business centers of Finnish and the Estonians - and co-financed by the European Commission under the PIC Ecos-Ouverture.

TOOLS Project

The Project TOOLS "New strategies and tools for the development of entrepreneurship in marginal rural areas" INTERREG III-C - North Zone - has developed innovative strategies and tools to promote and support rural entrepreneurship, stimulating investment in economic activities, creating new businesses and jobs, developing new products and services based on sustainable use of local natural resources.

This general objective is achieved through the North-South inter-regional cooperation among the marginalized rural regions concerned (Kainuu - FINLAND, Põlva - ESTONIA, National Park of Cilento and Vallo di Diano - ITALY) and by exchanging information, experiences and best practices.

Among the specific objectives of the project:

- Development of strategies and developing innovative and efficient tools for stimulating the creation of new micro and small enterprises in marginal rural areas, increase the competitiveness of existing production companies and encourage the creation of new job opportunities, with particular regard for the equal opportunities;
- strengthening cooperation and momentum transfer of know-how and good practices of marginal European rural regions worldwide;
- improving the skills and managerial and administrative capacity and public sector organizations supporting rural entrepreneurship;
- creating models of sustainable use of local natural resources and human potential.

The results obtained can be summarized as follows:

- Expansion of existing support structures for entrepreneurship with the creation of resource centers for entrepreneurial activity;
- definition of innovative tools and methods suited to support and stimulate rural businesses and generate new employment opportunities;
- sustainable use of local natural resources and improvement of human capital (capacity building and participation of employers);
- transfer of good practices and promotion of innovative tools to support rural businesses in regional and interregional.

Project INTERREG III B ARCHIMED: East Med – net (Eastern Mediterranean network for the sustainable development of the protected areas).

The objective of the project was to develop an ecological network of protected areas of Community Importance (Natura 2000). The Eastern Mediterranean Network aims to record the state of the environment and socio - economic in existing protected areas in order to develop common policies and management programs for biodiversity conservation. The project's ultimate objective is to increase attention to environmental issues and sensitize the inhabitants of each protected area network.

The project involved 9 partners from three EU member states (Greece, Cyprus, Italy) and involved three protected areas: the National Park of Cilento and Vallo di Diano National Park Northern Pindos and the natural range of Lemnos . Participation in the project of the universities is of great importance as provide their know - how, tools and experience necessary to record the environmental situation and socio - economic prevailing in the territories concerned and to allow local authorities involved to plan strategies for efficient area management and the promotion of environmental awareness of citizens.

Specifically, studies were made on the changes that have affected the landscape over the past 20 years, in three areas of the network, through the use of GIS. Were also analyzed through field research, the economic and social changes of the last 25 years, trying to identify the forces that brought them about, and any items in common areas of the network. Based on the data collected were processed scenarios of integrated policies, in view of sustainable development.

Project INTERREG III B ARCHIMED: –I-TRACE (Integrated Tourism in Rural Areas Valorising Culture and Environment)

INTERREG III B ARCHIMED is a transnational cooperation program aimed at promoting integration among European regions in order to facilitate sustainable development, harmonious and balanced development of regions and economic and social cohesion through the growth of competitiveness

The I-TRACE project, approved by decision of 28 March 2006 by the Steering Committee of the Community Programme INTERREG III B ARCHIMED, has aimed to support the competitiveness of SMEs in the use of eco-friendly natural and cultural resources of these areas ARCHIMED within the zone (Greece, Italy, Malta and

Cyprus), through the sharing of a development strategy with local stakeholders and the public and private adoption of the same behaviors that promote the spread of ethics for Tourism sustainable.

Progetto Integrato Territoriale (PIT) del PNCVD - POR CAMPANIA 2000/2006

The Park authority was the leader and the beneficiary of some actions of the integrated Project "The ecological network for the local sustainable development", financed with the funds of the POR Campania 2000 -2006. This integrated Project has been the most important of the Region Campania both in terms of involved communes (95) and for the economic resources assigned to the Park (€ 112.814.368,59).

Misura del POR Campania 2000 – 2006	N. Progetti approvati	Importo in euro
Misura 1.9 “Infrastrutture”	88	€77.680.963,61
Misura 1.9 “Servizi”		
Misura 1.10 “Regimi d’aiuto alle imprese ”	3	€25.893.654,50
Misura 3.18 (ex 1.11) “Formazione e Sviluppo Risorse Umane”	11	€3.597.637,79
5% FSE ASSE 3		€5.372.112,79
	TOTALE	€112.814.368,69

The actions are

- Strengthening of the structures for the safeguard and environmental exploitation through the realization of new structures and the recovery of existing buildings (Center of Studies and Researches on the biodiversity and geo-diversity; Center of Environmental Education, Center of Mediterranean Diet, Center of Visit “Otter”);
- Improvement of the eco-systemic functionality and increase of the degree of Nature of the territory of the Park (network of the ancient woods, interventions along the river bed of the principal rivers of the Park);
- Recovery and exploitation of the historical villages, restoration and exploitation of the archaeological sites, of the places of cult (for instance the Museum of Paleontology of Magliano Vetere, the archaeological area of Roccagloriosa, the paleontological site of Vallicelli, etc);

- Recovery and exploitation of historical-cultural-naturalistic itineraries that cross some principal geosites. Among these the “Via Istmica” must be remembered: retraining of the path (informative and popular sign system), the realization of rest areas and informative centers and the recovery of the whole abandoned rural suburb of Pietracupa (Roccadaspide);

Mediterranean diet

Ancel Keyes (1904-2004) moved in Cilento, remained there for 28 years, studying the benefits to health from a diet called "Mediterranean".

The Mediterranean Diet is a key element of social cohesion and aggregation, belongs to the history and determines the development of culture, representing a sustainable lifestyle.

In 2008, Italy, Morocco, Greece and Spain have applied at UNESCO the Mediterranean Diet as intangible cultural heritage of humanity

On 16 November 2010 in Nairobi, UNESCO has recognized MEDITERRANEAN DIET as the intangible Heritage of Humanity

The theme of the Mediterranean diet, was in March 2010, the subject of the Expression of Interest for the selection of partnership networks in the "strategic program of actions for interregional cooperation in the Campania region with priority for EU countries in the Mediterranean" - "priority action 4 - Development of production and trade" project proposal "Clusternet of Mediterranean Diet", for which the National Park Authority of the Cilento and Vallo di Diano, has been proposed as a Subject Leader of the partnership network.

Genetic Park of Cilento and Vallo di Diano

In recent years, genetic research is attracting worldwide interest. With the development of biotechnology, are numerous applications that can be derived from the study of genes for the treatment of major diseases, with the discovery of new drugs and diagnostics. By submitting a observation to the various factors (personal, environmental, dietary, genetic) origin of the health of local communities, it is possible to extract useful information for the study of the most common multifactorial diseases (cancers, cardiovascular diseases, neurodegenerative disorders, diabetes, migraine , osteoporosis).

The Genetic Park of Cilento and Vallo di Diano was born in 2000, "Multidisciplinary Research Project for the study of isolated populations," sponsored by the Institute of Genetics and Biophysics 'A.Buzzati-Traverso' (IGB CNR) in Naples. The start up of the program was created in collaboration with the Park Authority and subsequently the project was co-financed by the Campania Region in the POR Campania 2000-2006 (measure 3.16). Twelve municipalities participating in the project of the National Park: Campora, Gioi Cilento, Magliano, Moio della Civitella, Monteforte Cilento, Orria, Perito, Salento, Stio, Laurino, Valley of the Angel and Piaggine. They have some interesting features considered and stremamente-scientific studies on "genetic isolates" who on other areas of the world are providing significant results.

The project has as main aim to collect information to offer to medical science for the treatment of certain multifactorial diseases. These diseases are known to be caused by

the combined effect of genetic and environmental risk factors. Through analysis of various parameters on turning local populations, the survey aims to trace the genetic causes of complex hereditary diseases, and compare the results with those of Cilento are gathering in other scientific communities. The information gathered will help to increase the basic knowledge in genetics and biotechnological tools for developing practical applications for health, particularly in the fields of pharmacogenetics and biotechnology.

The activities are developed through a program divided into five phases:

The first two phases include historical studies - carried out on vital records archival municipal and parish of the individual countries of Genetic Park to learn about the natural history of each family and to determine the ties of kinship to the more remote in time.

Information from these surveys are indispensable for building family trees, which are then used during the studies for genetic testing of hereditary characters transmitted to descendants.

From the third phase begins on the direct current populations survey conducted on each inhabitant. The last stage consists in genetic research, which forms the core of the project. This part of the program is focused on the correlation between the health status of populations and their genetic heritage.

The program is the eighth year of operation. The first stage (stage 1 and 2) of the research has been implemented on a sample of 7 municipalities. The investigation was then continued in the first two pilot municipalities: Gioi Cilento (with the fraction of Cardile) and Campora, where territorial laboratories have been set up and are being direct surveys on populations. The analyzes performed so far on these populations have led to the publication of nine works in international scientific journals.

Estimated number of national scientists participating in research within the Biosphere Reserve on a permanent or occasional basis.

100

Estimated number of foreign scientists participating in research within the Biosphere Reserve on a permanent or occasional basis.

30

Research station(s) within the Biosphere Reserve.

Hydrogeomrfological monitoring

The National Park has an ongoing project to characterize hydro-geomorphology of rivers and has begun to monitor a sample basin by identifying significant sections of the watercourse for the acquisition of quantitative and qualitative data of the river

outflow and interactions with the subterranean water bodies, with particular reference to those karst (there are 5 permanent station and 20 temporary station). The monitoring system put in place is part of a much larger and covers the entire territory of the park. In fact, the Park Authority has in place an integrated research project for characterization, protection and proper use of geo-resources in the karst area.

The general objectives of this project is to create advanced research network on Sustainable Karst Resources in Training European Geoparks to perform best-practice management system in the Target European Geoparks and to improve Benefit-Sharing Protocols in the other European Countries with Karst Landscapes. The knowledge of the coupled geodiversity-biodiversity ecosystem functioning supported by karst hydro-geomorphological systems can increase their ecological services for public health (drinking water, carbon sinks), educational programs (field laboratories, outdoor lectures and dissemination network) and local development (agriculture, fisheries, hydropower, fruition, recreation). Therefore, the project is a training-project potentially extensible to the entire European Community karst areas in a way that is participatory, economically viable, and integrated with the national and regional scientific, ecological, educational and socio-economic goals. The specific objectives of the proposal are the creation of the European Scientific and Technical Karst Survey Network, by means interdisciplinary Studies and Reports in Karst Landscape Ecology, Hydro-geomorphology, Environmental Engineering, Biology, Fishery, Forestry, Rural & Industry, etc, linking the Project Management Network with Institutional Training Building Capacity. The Operational Tools will be the creation of Centres for Sustainable Karst Management (one for each ecological domain: Mediterranean, transitions and temperate), improving an European Sustainable Karst Management Network by means the European Karst Environmental Monitoring System and the European Karst Data Management and Processing by surveying/topography/land inventory, remote sensing and innovative mapping. The expected results is the proposition of a Work Plan for Sustainable Karst Management containing best practices in karst geosite fruition and use, operative Karst micro-project in karst resource protection policies and strategies, building and developing local capacity in karst management, by training of stakeholders, instructors and communities and integrating local uses into the international contest characterizing the Karst European Geoparks.

Permanent research station(s) outside the Biosphere Reserve.

University of Salerno, Università Federico II di Napoli, Università la Sapienza di Roma

Research facilities of research station(s) (meteorological and/or hydrological station, experimental plots, laboratory, library, vehicles, computers etc.).

The Park Authority has a innovative structure for the search "study center for research on Biodiversity and geodiversity". This center has all the instruments hardware, software and laboratories necessary for scientific research. Furthermore, it is still

under development, a virtual museum for teaching with innovative instrumentation. It will be a point of reference for Italian and foreign researchers. On territory of the Park there are other decentralized structures that are able to ospitare small research laboratories for the quantitative analysis of such rivers

Other facilities (e.g. facilities for lodging or for overnight accommodation for scientists etc.).

There are facilities spread across the territory owned by the Park (Villa Matarazzo Castellabate etc.) and other property of the municipalities (the convent of St. Anthony Laurino etc). These facilities can accommodate both researchers and students at very low prices .

Indicate how the results of research programmes have been taken into account in the management of the biosphere reserve

The Park Authority have a Master Plane and according to the L.394/1991, the Plan of the Park contains: general organization of the territory and its articulation in areas or parts characterized by homogeneous environmental conditions (systems and subsystems of landscape) and consequent diversified forms of use, enjoyment and safeguard; ties, destinations of public use or privacy and relative norms of realization with reference to the various areas or parts of the plan; systems of vehicular and pedestrian accessibility with particular respect to the paths, accesses and structures reserved to the disabled persons, to handicapped and old people; systems of equipments and services for the management the social function of the Park, museums, visit centers, informative offices, areas of camping, agri-touristic activity; trends and criterions for the interventions on flora, fauna and natural environment in general.

The art.4 of the Norms of implementation of the Plan of Park establishes some instruments of realization of the same Plan among which:

- The Plan of sector for the defense of the soil and the safeguard of water, facing to define the measures and the interventions to the goals of the hydro-geological safety and of the correct management of water (compiled);
- The Plan of the Landscape, facing to give realization to the European Convention of the Landscape (compiled).
- The plan of management of coastal area
- The energetic plan
- The plan of management of sustainable tourism
- The economic and social pluriennial plan
- The plan of management of Unesco Sites
- The plan of management of SIC and ZPS

The Plan of the Park determines, then, in its own cartography single assets or complexes of assets of elevated naturalistic value or scientific interest for characteristics of exceptionality, of uniqueness or of exemplariness (art. 12 of the

Norms of Realization "naturalistic emergencies"), for which the Park Authority promotes diversified forms of safeguard and exploitation to scientific, didactic, educational ends or of public enjoyment, also with the insertion of the sites in the paths and itineraries of the cultural and didactic tourism and with the predisposition of systems of monitoring. Among the naturalistic emergencies the areas containing geosites are listed, both in the Park and in the Neighbouring Areas, in which every new building or transformation of the territory is forbidden, except for the interventions expressly authorized by the Park authority, on the base of projects, equipped by opportune detailed scientific documentation, that guarantees the non-alteration of the elements of interest.

Finally, studies have been conducted specifically for marine protected areas that allow for correct management

VI. EDUCATION, TRAINING AND PUBLIC AWARENESS PROGRAMMES

Describe the types of activities related to

- *Environmental education and public awareness:*

In particular special didactic projects of environmental education have been realized in the schools of the area like "At School in the Park" (a pluriennial program of education about environment and sustainable development), with the purpose to introduce the young generations to environmental problems helping them to understand the values of the territory in which they live and the necessary actions for the correct maintenance and fruition. Such projects have been planned foreseeing moments of popularization in the classrooms integrated by excursions on the territory for the direct knowledge of the natural beauties and particularly of the geo-diversity present

- Training programmes for specialists:

Master in Coastal Sciences Applied. The Masters for the scientific improvement of graduates, scholars and professionals, and for the training of officials and staff of the Technical Services and agencies of local governments and private companies operating on the coastal territory.

Indicate whether there are facilities for education and training activities, as well as visitors' centres for the public

An initiative for education is an important program of environmental education that has been activated in the schools of the park. In the table below the schools involved into the project are listed.

SCHOOL YEAR	SCHOOLS	CLASSES	PUPILS	TEACHERS	MEETINGS
2004-2005	30	467	5000	30	1625
2005-2006					
2006 - 2007	27	120	1800	27	360
2008 - 2009	36	133	2700	36	400
2009 - 2010	50	145	3000	47	400

This program is oriented to the schools, connected to the themes of the "Sciences of Earth", the biodiversity and the geologic patrimony present in the protected territory. It is planned to realize a pluriennial program of education to the environment and the sustainable development, that will give to the world of school: the fruition, the knowledge, the rediscovery, the safeguard and the exploitation of the places; initiatives of information and sensitization to the eco-compatible use of the resources of the territory of the National Park of the Cilento and Vallo di Diano. In this way a culture can be spread that will recognize in the geologic and biologic Patrimony a collective good to be respected, valorized and managed wisely, a culture that will be

able of to form an active citizenship both able to evaluate the choices of planning and of territorial management and to assume a responsible behavior towards the environment.

A lot of activities have been realized for the safeguard and exploitation of flora and fauna of the park.

Finally, in the territory of the Park beside the existence of a network of paths of about 1500 Km, mostly marked according to the modalities of the Italian Alpine Club, and partly equipped with didactic panels, system of signs, rest areas etc., there is also a network of about 41 Museums (archaeological, geologic, paleontological, of the country civilization, of the sea, an Antiquarium etc).

VII. INSTITUTIONAL ASPECTS

State, Province, Region or other administrative units

List in hierarchical order administrative entity(ies) in which the Biosphere Reserve is located (e.g. state(s), counties, districts).

<i>Cilento and Vallo di Diano Biosphere Reserve</i>			
Country	Province/s	Region/s	Municipality/ies
Italy	Salerno	Regione Campania	95

Management plan/policy

Indicate if a management plan or policy exists for the overall biosphere reserve.

Plan Park

Plan of socio- economic development

SIC and ZPS Management plans

Decree and Regulation of Minister of Environment for Marine Protected Areas

If yes, briefly describe the main characteristics of this plan and precise the modes of application.

Plan of socio- economic development – It identifies and promotes initiatives for economics and social development sustainable in the park;

SIC and ZPS Management plans – operational tool to regulate land uses in order to make them compatible with the presence in optimal conditions of habitats and species that led to identifications of the SIC and ZPS; it defines the actions and conservation measures necessary to maintain them.

Decree and Regulation of Minister of Environment for Marine Protected Areas defines the different areas (A, B, C) whit different levels of protection

Table A- Instruments of government land on the UNESCO World Heritage Site

ex Legge Regionale 16/2004 "Norme sul governo del territorio"

Regional Territorial Master Plane (PTR)	that addresses requirements for the development of the entire region. In the Guidelines for the landscape of the PTR, part of the PTR, the UNESCO sites are included in the "Landscape Assets of the whole" part of the Statute of the Territory and are therefore the subject of landscape planning at various levels (regional, provincial, municipal). current
Landscape territorial Mastr Plans (Cilento Internal; Cilento Coastal)	Plans drawn up by the Superintendency under LN 431/1985, and designed to ensure the protection of restricted areas scenically through specific decrees. current

Territorial palne of Province coordination	Plan are territorial and landscape under the LR 16/2004, transposing the addresses of PTR and defines instruments for municipalities. The role of intermediate bodies In preparation phase
Planning tools	The territory of the site affects 80 municipalities, all with the Municipal Planning Tools but some are dated and only a few are prepared in accordance with Law 16/2004.

Table B- Planning tools and management prepared by the Park <i>ex Legge Nazionale 394/1991 “Legge Quadro sulle aree protette”</i>	
Park Master Plan	It defines the different areas of the park whit different levels of protection (approved by the board of the Campania region December 24, 2009)
Landschap Plan	Implementation tool of the Park Plan is aimed at the protection, planning and management of the landscape under the Code Legislative “URBANI” 42/2004.
Plan for the integrated coastal management (GIZC)	This plan has the aim of building a model of sustainable local development rooted in a vision of rebalancing functional involvement coast - inland areas, with the involvement of all the leaders of local, regional, national and European, and more generally of all persons whose activities affect coastal regions, and also the local people, non-governmental organizations and businesses.
Sector plan for the protection of soil and water conservation	The sector plan for the protection of soil and water conservation is to support the planning of the park, and is a tool to define - within the regulatory framework and the skills of the Park - the measures, corrective action and strategies to be taken to combine the hydrogeological security and proper management of the water on one side with the ecological and biodiversity protection on the other.
Plan of socio- economic development	It identifies and promotes initiatives for economics and social development sustainable in the park
Naturalistic management plan	The Management Plan naturalistic aims to coordinate the activities and actions of the Park for the protection and management of natural resources in continuity and in specification of the Park Plan, defining: prevention, control and recovery of wildlife resources and vegetation, guidance and coordination Entity with respect to the management of natural resources, guide the preparation of projects for study and research and monitoring.
SIC and ZPS Management plans	operational tool to regulate land uses in order to make them compatible with the presence in optimal conditions of habitats and species that led to identifications of the SIC and ZPS; it defines the actions and conservation measures necessary to maintain them.

- Decree and Regulation (21/10/2009) of Minister of Environment for Marine Protected Areas defines the different areas (A, B, C) with different levels of protection
- DECREE OF PRESIDENT OF CAMPANIA REGION- 26 march 2001, n. 516 ECOLOGY - Enactment of the Regulation in the contiguous areas of Cilento and Vallo di Diano National Park

Authority in charge of administration of the whole, i.e. of implementation of this plan/policy:

National Park Authority of the Cilento and Vallo di Diano

Total number of staff of Biosphere Reserve:

36 + 1 (Director)

Financial source(s) and yearly budget:

Indicate the source and the relative percentage of the funding (e.g. from national, regional, local administrations, private funding, international sources etc.) and the estimated yearly budget in the national currency.

FONTE FINANZIAMENTO	ANNO 2010	ANNO 2011	ANNO 2012
ENTRATE CORRENTI			
Trasferimenti dallo Stato	4.229.877,31	5.350.384,86	3.751.619,78
Trasferimenti dalla Regione	5.000,00	0,00	0,00
Trasferimenti da altri enti	0,00	45.000,00	0,00
Altre Entrate	15.289,06	15.210,70	58.400,00
TOTALE ENTRATE CORRENTI	4.250.166,37	5.410.595,56	3.810.019,78
ENTRATE IN CONTO CAPITALE			
Trasferimenti dallo Stato	1.555.370,00	426.649,30	0,00
Trasferimenti dalla Regione	0,00	200.000,00	0,00
Trasferimenti da altri enti	0,00	25.000,00	0,00
TOTALE ENTRATE IN CONTO CAPITALE	1.555.370,00	651.649,30	0,00
TOTALE GENERALE ENTRATE	5.805.536,37	6.062.244,86	3.810.019,78

Authority in charge of administration

The biosphere reserve as a whole:

National Park Authority of the Cilento, Vallo di Diano and Alburni

Core area(s):

National Park Authority of the Cilento, Vallo di Diano and Alburni

Buffer zone(s):

National Park Authority of the Cilento, Vallo di Diano and Alburni

Mechanisms of consultation and co-ordination among these different authorities:

There is one Authority National Park Authority of the Cilento, Vallo di Diano and Alburni organized in the following way:

Board of directors: 12 components more the President.

Executive council: 4 component chosen among the Board of directors more the President

The operative structure of the Park is divided into three areas: Technical and Preservation Nature, General Affair and Communication-Promotion, for a total of 36 employees coordinated by a General Director.

There is also the Park Community as small Parliament that said the strategic direction and policy to be followed

Where appropriate, National (or State, or Provincial) administrations to which the biosphere reserve reports:

- Ministry of the environment, land and sea
- Region Campania
- Province of Salerno
- Common (80)
- Contiguous areas

Mechanism for consultation of local communities

Indicate how and to what extent local people living within or near the Biosphere Reserve.

- have been associated to the biosphere reserve nomination:

One of the organs of the Park is the Park Community, formed by representatives of municipalities, county and regional authorities on the territory

- participate to the decision process and management resources:

One of the organs of the Park is the Park Community, formed by representatives of municipalities, county and regional authorities on the territory

For the transition areas there is also the regulation of contiguous areas of National Park

An innovative action achieved in the marine areas has been the creation of a Coastal Action Group (CAG) after a long participatory process. CAG is a consortium that

gathers fishing associations, coastal municipalities (Agropoli, Castellabate, Montecorice, San Mauro C.to, Pollica, Casal Velino, Ascea, Pisciotta, Centola-Palinuro, Camerota, San Giovanni a Piro, Vibonati e Sapri) recreational boating clubs, tourism agencies and Cilento, Vallo di Diano and Alburni National Park. It has been established and organised according to the guidelines provided by Campania Region. Aim of the consortium is to develop a local development plan funded by EFF, where high priority shall be given to the elaboration of alternative and integrative opportunities for the fishery sector, through the development of agricultural and eco-tourism initiatives, new fishing and mariculture systems, etc.

Indicate whether you consider the participation of local communities to be satisfactory and, if not, what measures are envisaged to improve this situation

The park Authority organizes meetings with trade associations such as hoteliers merchants, farmers, mayors and administrators to discuss land issues and together find solutions for a sustainable development

Protection regime of the core area and possibly of the buffer zone

Indicate the type (e.g. under national legislation and date since when the legal protection came into being and provide justifying documents (with English or French summary of the main features).

According to the Law 394/1991, the Plan of the Park contains: general organization of the territory and its articulation in areas or parts characterized by homogeneous environmental conditions (systems and subsystems of landscape) and consequent diversified forms of use, enjoyment and safeguard; ties, destinations of public use or privacy and relative norms of realization with reference to the various areas or parts of the plan; systems of vehicular and pedestrian accessibility with particular respect to the paths, accesses and structures reserved to the disabled persons, to handicapped and old people; systems of equipments and services for the management the social function of the Park, museums, visit centers, informative offices, areas of camping, agri-touristic activity; trends and criterions for the interventions on flora, fauna and natural environment in general.

Park plan defines the different areas of the park (A, B, C e D) with different levels of protection;

Decree and Regulation of Minister of Environment for Marine Protected Areas defines the different areas (A, B, C) whit different levels of protection

Land tenure of each zone

Percentage of ownership in terms of national, state/provincial, local government, private, etc.

Core Area(s): **NO DATA**

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Buffer Zone(s): **NO DATA**

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Transition Area(s): **NO DATA**

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Foreseen changes in land tenure.

No

Is there a land acquisition programme, to purchase private lands, or plans for privatization of public lands?

No

Contact address(es)

Contact address of the biosphere reserve for all official correspondence.

<u>Contact address</u>	<i>Name</i>	<i>ANGELO De Vita Cilento, Vallo di Diano and Alburni National Park</i>
	<i>Street or P.O Box</i>	<i>Piazza Santa Caterina 8</i>
	<i>City with Postal Code</i>	<i>Vallo della Lucania - 84078</i>
	<i>Country</i>	<i>Italia</i>

	<i>Telephone</i>	+39 0974/719911
	<i>Telefax</i>	+39 0974/7199217
	<i>E-mail</i>	direttore@cilentoediano.it
	<i>Web site address</i>	www.cilentoediano.it

VIII. CONCLUSION

Brief justification of the way in which the biosphere reserve fulfils each criteria of article 4:

1. Representative ecological systems - graduation of human interventions

The Biosphere Reserve is located in Campania Region South Italy, and it includes all territory of National Park of the Cilento, Vallo di Diano and Alburni, its contiguous areas and Marine Protected Areas (Santa Maria di Castellabate e Costa degli infreschi e della Masseta). It is characterized by low dolomite mountains with typical karst features such as sinkholes and caves. The coastline is made up of cliffs, bays and sandy beaches, with sea caves and freshwater springs. The Mediterranean sclerophyll vegetation is divided into many habitats according to altitude, ranging from dry coastal garrigue, to Holm oak woodlands, mixed forests of oak, hornbeam, and alder, natural stands of European beech, to high-altitude grasslands. The fauna is noted for its birds, notably birds of prey. Marine environment is characterized by wide seagrass beds, that form an almost continuous strip all along the coasts, and by coralligenous bioconstructions with a very high biodiversity

In the Biosphere Reserve there are 28 Sites of Community Interest (SIC) founded by the Directive 92/43/CEE (Directive Habitat) and 8 Zones of Special Protection, founded according the Directive 79/409/CEE (Directive Birds), all included in the Mediterranean Bio-geographic Region. The Nature 2000 Network occupies a surface of 118.316 hectares, equal to the 65% of the whole Park and it will be managed through the relative Plans of Management and the mater Plan of Park.

Furthermore, the presence of endemic species and whole habitats belonging to the presence of Mediterranean and temperate Biocore are of the Cilento one area of biological and morphological interest around the Mediterranean basin.

1. Coastal and Halophytic Habitat
2. Sea Dunes of the Mediterranean coast
3. Freshwater Habitat
4. Sclerophyllous scrub (MATORRAL)
5. Natural and semi-natural grassland formation
6. Rocky habitats and caves
7. *Posidonia oceanica* seagrass bed
8. Forests

2. Significance for biological diversity conservation

One of the most interesting character of the National Park of Cilento and Vallo di Diano is the high value of biological diversity strongly related to variability lithological, geomorphological and climatic hardly found in other parts of the peninsula. There are four main lithological complexes that determine many systems landscape: the carbonate aquifer, the sandstone-conglomerate-marl and clay, each

with its own characteristics and different vocations of use, while the system is the link between the clastic three above and between them and the sea.

Among the new floristic-vegetation of the carbonate system is highlighting the coastal plant communities of almost inaccessible cliffs between Capo Palinuro and Scario: the endemic *Primula palinuri*, *Dianthus rupicola*, *Centaurea cineraria*, *Daucus gingidium*, *Inula chrithmoides*, *Crithmum maritimum*, *Iberis semperflorens* (*Dianthion rupicolae*), the residue of the primary flaps *Euphorbia dendroides*, *Juniperus* and *Pistacia lentiscus phoenicea* (Oleo-Ceratonion) observed along Costa Infreschi. Common emergencies to massive carbonate nn are the coastal mountains to scrublands *Lavandula angustifolia*, *Salvia officinalis* and *Euphorbia spinosa* and meadows rich in orchids in *Bromus erectus*, *Phleum ambiguum*, *Koeleria splendens*, *Globularia meridionalis*, *Asphodeline lutea* (priority habitat according to EEC Directive 92 / 43).

On the Carbonate rocks of the internal system, in particular morphotypes gorge (Gorges Sammaro of Mingardo Bussento and Alburni Mountains) there is a very peculiar vegetation chasmophytic characterized by rare *Portenschlagiella ramosissima* and *Phagnalon rock*, *Athamantha sicula* and *Campanula fragilis* (*Campanulo fragilis*, 44 *Portenschlagiellum ramosissimae*). In such contexts gorge also are found mixed with strips of wood *carpinifolia Ostrya*, *Acer neapolitanum*, *A. country*, *Corylus avellana*, *Alnus cordata*, *Tilia plathyphyllos*, *Fraxinus ornus* and locally *lobelii Acer* and *Fraxinus excelsior*.

The system sandstone-conglomerate is characterized mainly by its forest vocation in the temperate and in the Transition region. Significant from the point of view the presence of biogeographic and oak forests on Mount farnetto Farneta (*Echinop Sicilian-Quercetum cerridis*), the absolute importance of the *cerris* trees and mixed forests of Mount Centaurino mesophilic and valleys of Mount Gelbison, also characterized by numerous individuals of *Ilex aquifolium* and *Taxus baccata*. The sandstone-conglomerate is characterized by the presence of an absolute as *Minuartia moraldoi* endemism, known for a single station located on the cliffs of the summit of Mount Gelbison. In some locations of Mount Motola (Patrelli Coast) and the Alburni (Sicignano), there are beech forests characterized by the presence of *Abies alba*, especially now very rare Southern Apennines, while on Cervati and Mount Faiatella are interesting relics of nuclei *Betula pendula*. At their lower limit of the beech forests in contact with mixed forests dominated by mesophile *Quercus cerris* and *Ostrya carpinifolia*, or coenoses more thermophile-related all'*Ostryo Carpinion*. In the transition range between beech and oak woods are quite widespread thinning of secondary origin, adominanza of *Alnus cordata*.

The system clay-marl, in its articulation within the climate turns out to be a greater commitment to agriculture. In this system in the Mediterranean Region and the Transition triumphed coenoses a secondary related to the abandonment of pastures and traditional land use activities. Limited to a few strips of vegetation there is the potential represented by thermophilic oak woods and oak, and are popular spots in the heather, and myrtle (*Erico-Arbutetum*) as well as to *Calicotome cisteti* and hairy bushes. In the system clay-marl also be found at Campora of cerrete of considerable value and extent. In the temperate region on clay lithologies predominate mesophile

pastures dominated by *Brachypodium rupestre*, *Bromus erectus* and *Dorycnium pentaphyllum*.

3. Approaches to sustainable development on a regional scale

The institutional finalities of the Park authority are established by the art. 1 of the law 394/91 and are:

- maintenance of animal or vegetable species, of vegetable or forest associations, of geological formations, of paleontological formations, of biological community, of biotopes, of scenic and panoramic values, of natural processes, of hydraulic and hydrogeological equilibriums, of ecological equilibriums;
- application of methods of management or environmental restoration to realize an integration between man and the natural environment, also through the safeguard of the anthropological, archaeological, historical and architectural values and the agro-silvo-pastoral and traditional activities;
- promotion of activity of education, of formation and of scientific research, also interdisciplinary, as well as of compatible recreational activity;
- defense and reconstitution of the hydraulic and hydrogeological equilibriums.

These are the basic principles that allow the Park Authority to operate as a pilot site for sustainable development

4. Appropriate size to serve the three functions

The size of the site, which zonation develops gradually between conservation priorities provided in core areas, and sustainable initiatives undertaken (sustainable tourism, traditional agriculture, environmental education, wood industry, monitoring, research, etc.) appear adequate to ensure both protection objectives, long-term, into the core and buffer areas and socio-economic development in the areas of transition.

The Biosphere Reserve includes all territory of National Park of the Cilento, Vallo di Diano and Alburni, its contiguous areas and Marine Protected Areas (Santa Maria di Castellabate e Costa degli infreschi e della Masseta). Thus, it represents one of the largest biosphere reserves, including those identified in the Mediterranean biogeographical Region.

Specifically, the core area, which covers about 6% of the surface area of the Reserve, with dimensions entirely functional in the monitoring and conservation activities of the large mosaic of ecosystems, habitats and species characteristics of the territory, as provided for and regulated the MAB Programme.

The buffer area, with approximately 42% extension, fully meet the goal of total protection of the core allowing at the same time, the development of traditional productive activities, agriculture and forestry and pastoral, as well as tourism and recreation.

The transition area, finally, with a coverage of about 52% of the entire study area, provides a wide territorial basis for the implementation of sustainable development activities and logistical support as required for each MAB Reserve. The transition area of the Reserve, the promotion of a wide range of sustainable activities with the ability to work closely with different economic and social realities.

The proposed expansion of the reserve referred to AMP and the contiguous areas of the National Park of Cilento, in particular, allows you to extend the transition area, to protect the core and buffer areas. The proposal also allows to involve a larger population, thus favoring the realization of sustainable development activities.

5. Appropriate zonation to serve the three functions

Area core	Situazione giuridica	Master Plane of National Park and MPA regulament of Enviromental Minister
	Dimensioni	22.859 ha
	Obiettivi di conservazione	Research activities and monitoring activities.
Area buffer	Situazione giuridica	Master Plane of National Park and MPA regulament of Enviromental Minister
	Dimensioni	164.760 ha
	Attività in corso	Research, monitoring and rural and economical activities
Area transition	Dimensioni	207.884
	Attività di sviluppo sostenibile	Rural, economical and turistics activities

6. Participation of public authorities and local communities

All activities of the biosphere reserve involve, depending on the different types, the stekolders public and private. For example, the master plan has been carried out with the direct involvement of the community in the park, the municipalities and private stekolders. SIC and ZPS Management Plans were carried out through a participatory process, involving all stekolders of the territory (municipalities, trade associations, environmental organizations, schools etc).

The research activities are often carried out in collaboration with organizations working in the area.

7.
 - a) mechanisms to manage human use and activities
 - b) Management policy or plan
 - c) Authority or mechanism for implementation
 - d) Programmes for research, monitoring, education and training
- The Biosphere Reseve is already ruled by national and regional regulations (see paragraph VI e VII) to guarantee the protection, valorization and promotion of the whole territory of competence. Thanks to these legislative instruments and the management structure of the biosphere reserve, which coincides with that of the national park, you can start additional activities that will make stronger action on the territory of the Biosphere reserve.

- Actually the initiative for education is an important program of environmental education that has been activated in the schools of the park. In particular this program introduces the young generations to environmental problems helping them to understand the values of the territory in which they live and the necessary actions for the correct maintenance and fruition. Such projects have been planned foreseeing moments of popularization in the classrooms integrated by excursions on the territory for the direct knowledge of the natural beauties and particularly of the geo-diversity present.
- The Park Authority has a innovative structure for the search "study center for research on Biodiversity and geodiversity". This center has all the instruments hardware, software and laboratories necessary for scientific research. Furthermore, it is still under development, a virtual museum for teaching with innovative instrumentation. It will be a point of reference for Italian and foreign researchers. On territory of the Park there are other decentralized structures that are able to ospitare small research laboratories for the quantitative analysis of such rivers
- The National Park has an ongoing project to characterize hydro-geomorphology of rivers and has begun to monitor a sample basin by identifying significant sections of the watercourse for the acquisition of quantitative and qualitative data of the river outflow and interactions with the subterranean water bodies, with particular reference to those karst (there are 5 permanent station and 20 temporary station). The monitoring system put in place is part of a much larger and covers the entire territory of the park. In fact, the Park Authority has in place an integrated research project for characterization, protection and proper use of geo-resources in the karst area.
- Socio-economic research: The "Marchi d'Area"; Project LIFE ENVIRONMENT - Project TIRSAV PLUS: Technologies innovative for the recycling of olive residues and of waters of vegetation; MATERRA Project: Line Park; TOOLS Project; Project INTERREG III B ARCHIMED: East Med – net (Eastern Mediterranean network for the sustainable development of the protected areas); Project INTERREG III B ARCHIMED: –I-TRACE (Integrated Tourism in Rural Areas Valorising Culture and Environment);

Does the biosphere reserve have cooperative activities with other biosphere reserves (exchanges of information and personnel, joint programmes, etc.)?

At the national level:

We have participated in several meetings with other biosphere reserves in order to define the guide line of action. Individually, each subject has carried out its activities.

Through twinning and/or transboundary biosphere reserves:

- **The Mediterranean Diet** is a key element of social cohesion and aggregation, belongs to the history and determines the development of culture, representing a sustainable lifestyle. In 2008, Italy, Morocco, Greece and Spain have applied at UNESCO the Mediterranean Diet as intangible cultural heritage of humanity. On 16 November 2010 in Nairobi, UNESCO has recognized MEDITERRANEAN DIET as the intangible Heritage of Humanity.
- **Genetic Park of Cilento and Vallo di Diano.** In recent years, genetic research is attracting worldwide interest. With the development of biotechnology, are numerous applications that can be derived from the study of genes for the treatment of major diseases, with the discovery of new drugs and diagnostics. The Genetic Park of Cilento and Vallo di Diano was born in 2000, "Multidisciplinary Research Project for the study of isolated populations," sponsored by the Institute of Genetics and Biophysics 'A.Buzzati-Traverso' (IGB CNR) in Naples
- **Project INTERREG III B ARCHIMED: East Med – net (Eastern Mediterranean network for the sustainable development of the protected areas).** The objective of the project was to develop an ecological network of protected areas of Community Importance (Natura 2000). The Eastern Mediterranean Network aims to record the state of the environment and socio-economic in existing protected areas in order to develop common policies and management programs for biodiversity conservation. The project's ultimate objective is to increase attention to environmental issues and sensitize the inhabitants of each protected area network. The project involved 9 partners from three EU member states (Greece, Cyprus, Italy) and involved three protected areas: the National Park of Cilento and Vallo di Diano National Park Northern Pindos and the natural range of Lemnos .
- **Project INTERREG III B ARCHIMED: –I-TRACE (Integrated Tourism in Rural Areas Valorising Culture and Environment).** It is a transnational cooperation program aimed at promoting integration among European regions in order to facilitate sustainable development, harmonious and balanced development of regions and economic and social cohesion through the growth of competitiveness. The I-TRACE project, approved by decision of 28 March 2006 by the Steering Committee of the Community Programme INTERREG III B ARCHIMED, has aimed to support the competitiveness of SMEs in the use of eco-friendly natural and cultural resources of these areas ARCHIMED within the zone (Greece, Italy, Malta and Cyprus), through the sharing of a development strategy with local stakeholders and the public and private adoption of the same behaviors that promote the spread of ethics for Tourism sustainable.

Within the World Network (including Regional Networks):

In 2010 the Cilento and Vallo di Diano geopark was recognized as Geopark. The Geoparks represent a special category of territory which are gradually getting international and national fame thanks to the special attention and care given to them by the geodiversity and geological patrimony. A GeoPark with international recognition is a territory which:

1. has a great geological patrimony and a sustainable development strategy;
2. well defined boundaries and a sufficient size to allow for an effective economic development of the local area;
3. must have a certain number of geological sites of particular importance in terms of their scientific, rarity, aesthetic or educational value. The majority of the sites present in the territory of a GeoPark has to belong to a geological patrimony, but their interest could also be archaeological, ecological, historical or cultural;
4. has a network link of all the geosites and protection and management benefits;
5. has to guarantee conservation and prohibit the selling of geological findings;
6. has a planned management structure, able to strengthen the protection, the valorisation and the policies for the development of its territory;
7. has an active role in the economic development of its territory through the valorisation of a general image linked to its geological patrimony and its development for geo-tourism;
8. has a direct impact on its territory to favour the conditions of life of its inhabitants and environment;
9. it allows the citizens to regain the value of the territory' heritage and to participate actively in its culture as a whole;
10. develops, experiments and exchanges methods for the protection of the geological patrimony;
11. promote environmental education, formation and development in scientific research in various fields in Earth Science, improve the natural environment and increase the policies for a sustainable development.

All geopark work together for the development of territory.

Obstacles encountered, measures to be taken and, if appropriate, assistance expected from the Secretariat

No obstacles encountered

ANNEX

THE STATUTORY FRAMEWORK OF THE WORLD NETWORK OF BIOSPHERE RESERVES

Introduction

Within UNESCO's Man and the Biosphere (MAB) programme, biosphere reserves are established to promote and demonstrate a balanced relationship between humans and the biosphere. Biosphere reserves are designated by the International Co-ordinating Council of the MAB Programme, at the request of the State concerned. Biosphere reserves, each of which remains under the sole sovereignty of the State where it is situated and thereby submitted to State legislation only, form a World Network in which participation by the States is voluntary.

The present Statutory Framework of the World Network of Biosphere Reserves has been formulated with the objectives of enhancing the effectiveness of individual biosphere reserves and strengthening common understanding, communication and co-operation at regional and international levels.

This Statutory Framework is intended to contribute to the widespread recognition of biosphere reserves and to encourage and promote good working examples. The delisting procedure foreseen should be considered as an exception to this basically positive approach, and should be applied only after careful examination, paying due respect to the cultural and socio-economic situation of the country, and after consulting the government concerned.

The text provides for the designation, support and promotion of biosphere reserves, while taking account of the diversity of national and local situations. States are encouraged to elaborate and implement national criteria for biosphere reserves which take into account the special conditions of the State concerned.

Article 1 - Definition

Biosphere reserves are areas of terrestrial and coastal/marine ecosystems or a combination thereof, which are internationally recognized within the framework of UNESCO's programme on Man and the Biosphere (MAB), in accordance with the present Statutory Framework.

Article 2 - World Network of Biosphere Reserves

1. Biosphere reserves form a worldwide network, known as the World Network of Biosphere Reserves, hereafter called the Network.
2. The Network constitutes a tool for the conservation of biological diversity and the sustainable use of its components, thus contributing to the objectives of the Convention on Biological Diversity and other pertinent conventions and instruments.
3. Individual biosphere reserves remain under the sovereign jurisdiction of the States where they are situated. Under the present Statutory Framework, States take the measures which they deem necessary according to their national legislation.

Article 3 - Functions

In combining the three functions below, biosphere reserves should strive to be sites of excellence to explore and demonstrate approaches to conservation and sustainable development on a regional scale:

- (i) conservation - contribute to the conservation of landscapes, ecosystems, species and genetic variation;
- (ii) development - foster economic and human development which is socio-culturally and ecologically sustainable;
- (iii) logistic support - support for demonstration projects, environmental education and training, research and monitoring related to local, regional, national and global issues of conservation and sustainable development.

Article 4 - Criteria

General criteria for an area to be qualified for designation as a biosphere reserve:

1. It should encompass a mosaic of ecological systems representative of major biogeographic regions, including a gradation of human interventions.
2. It should be of significance for biological diversity conservation.
3. It should provide an opportunity to explore and demonstrate approaches to sustainable development on a regional scale.
4. It should have an appropriate size to serve the three functions of biosphere reserves, as set out in Article 3.
5. It should include these functions, through appropriate zonation, recognizing:
 - (a) a legally constituted core area or areas devoted to long-term protection, according to the conservation objectives of the biosphere reserve, and of sufficient size to meet these objectives;
 - (b) a buffer zone or zones clearly identified and surrounding or contiguous to the core area or areas, where only activities compatible with the conservation objectives can take place;
 - (c) an outer transition area where sustainable resource management practices are promoted and developed.
6. Organizational arrangements should be provided for the involvement and participation of a suitable range of inter alia public authorities, local communities and private interests in the design and carrying out the functions of a biosphere reserve.
7. In addition, provisions should be made for:
 - (a) mechanisms to manage human use and activities in the buffer zone or zones;
 - (b) a management policy or plan for the area as a biosphere reserve;
 - (c) a designated authority or mechanism to implement this policy or plan;
 - (d) programmes for research, monitoring, education and training.

Article 5 - Designation procedure

1. Biosphere reserves are designated for inclusion in the Network by the International Co-ordinating Council (ICC) of the MAB programme in accordance with the following procedure:
 - (a) States, through National MAB Committees where appropriate, forward nominations with supporting documentation to the secretariat after having reviewed potential sites, taking into account the criteria as defined in Article 4;

(b) the secretariat verifies the content and supporting documentation: in the case of incomplete nomination, the secretariat requests the missing information from the nominating State;

(c) nominations will be considered by the Advisory Committee for Biosphere Reserves for recommendation to ICC;

(d) ICC of the MAB programme takes a decision on nominations for designation. The Director-General of UNESCO notifies the State concerned of the decision of ICC.

2. States are encouraged to examine and improve the adequacy of any existing biosphere reserve, and to propose extension as appropriate, to enable it to function fully within the Network. Proposals for extension follow the same procedure as described above for new designations.

3. Biosphere reserves which have been designated before the adoption of the present Statutory Framework are considered to be already part of the Network. The provisions of the Statutory Framework therefore apply to them.

Article 6 - Publicity

1. The designation of an area as a biosphere reserve should be given appropriate publicity by the State and authorities concerned, including commemorative plaques and dissemination of information material.

2. Biosphere reserves within the Network, as well as the objectives, should be given appropriate and continuing promotion.

Article 7 - Participation in the Network

1. States participate in or facilitate co-operative activities of the Network, including scientific research and monitoring, at the global, regional and sub-regional levels.

2. The appropriate authorities should make available the results of research, associated publications and other data, taking into account intellectual property rights, in order to ensure the proper functioning of the Network and maximize the benefits from information exchanges.

3. States and appropriate authorities should promote environmental education and training, as well as the development of human resources, in co-operation with other biosphere reserves in the Network.

Article 8 - Regional and thematic subnetworks

States should encourage the constitution and co-operative operation of regional and/or thematic subnetworks of biosphere reserves, and promote development of information exchanges, including electronic information, within the framework of these subnetworks.

Article 9 - Periodic review

1. The status of each biosphere reserve should be subject to a periodic review every ten years, based on a report prepared by the concerned authority, on the basis of the criteria of Article 4, and forwarded to the secretariat by the State concerned.

2. The report will be considered by the Advisory Committee for Biosphere Reserves for recommendation to ICC.

3. ICC will examine the periodic reports from States concerned.
4. If ICC considers that the status or management of the biosphere reserve is satisfactory, or has improved since designation or the last review, this will be formally recognized by ICC.
5. If ICC considers that the biosphere reserve no longer satisfies the criteria contained in Article 4, it may recommend that the State concerned take measures to ensure conformity with the provisions of Article 4, taking into account the cultural and socio-economic context of the State concerned. ICC indicates to the secretariat actions that it should take to assist the State concerned in the implementation of such measures.
6. Should ICC find that the biosphere reserve in question still does not satisfy the criteria contained in Article 4, within a reasonable period, the area will no longer be referred to as a biosphere reserve which is part of the Network.
7. The Director-General of UNESCO notifies the State concerned of the decision of ICC.
8. Should a State wish to remove a biosphere reserve under its jurisdiction from the Network, it notifies the secretariat. This notification shall be transmitted to ICC for information. The area will then no longer be referred to as a biosphere reserve which is part of the Network.

Article 10 - Secretariat

1. UNESCO shall act as the secretariat of the Network and be responsible for its functioning and promotion. The secretariat shall facilitate communication and interaction among individual biosphere reserves and among experts. UNESCO shall also develop and maintain a worldwide accessible information system on biosphere reserves, to be linked to other relevant initiatives.
2. In order to reinforce individual biosphere reserves and the functioning of the Network and sub-networks, UNESCO shall seek financial support from bilateral and multilateral sources.
3. The list of biosphere reserves forming part of the Network, their objectives and descriptive details, shall be updated, published and distributed by the secretariat periodically.