Geosites of International importance

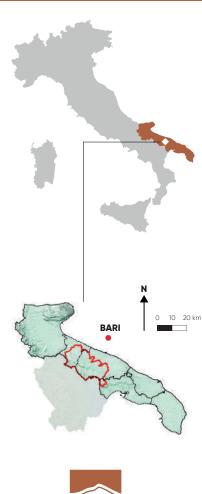
SP1	Murge antiform edge
SP2	Bauxite Mines of Murgetta Rossa
	(Turonian unconformity)
SP4	The foredeep succession pinching on the foreland plank
	(Plio-Pleistocene)
SP10	The Murge Alte scarp
SP11	The Minervino Murge scarp
AP1	Puglia1 well
AP2	Palorbitolina-rich beds
AP4	Sauvagesia and Caprinula beds
AP5	Lagoonal strata with a Pithonomorpha skeleton
AP7	Dinosaurs tracks of Cava Pontrelli
BT4	Pliocene bioerosion in the Calcarenite di Gravina
	of Murgetta Grande
BT8	A Gilbert-type delta within heterozoan carbonate
	(early Pleistocene)
BT9	Genus Terebratula: Solutions to some historical,
	geological and biological puzzles
BT10	The Scacchi collection: a Quaternary reference
	(Albanello locality, Gravina)
BT12	A new specie of Limatula (L. gravinae)
BT13	Trace fossil assemblage of Notargiacomo's quarry
К2	"Pulo di Altamura" sinkhole
К2	"Grave del Pulo" deen karst abyss (included in K 2)

- "Grave del Pulo" deep karst abyss (included in K 2) K2
- K3 "Grotta di Lamalunga" cave "Castel del Monte" castle MG4

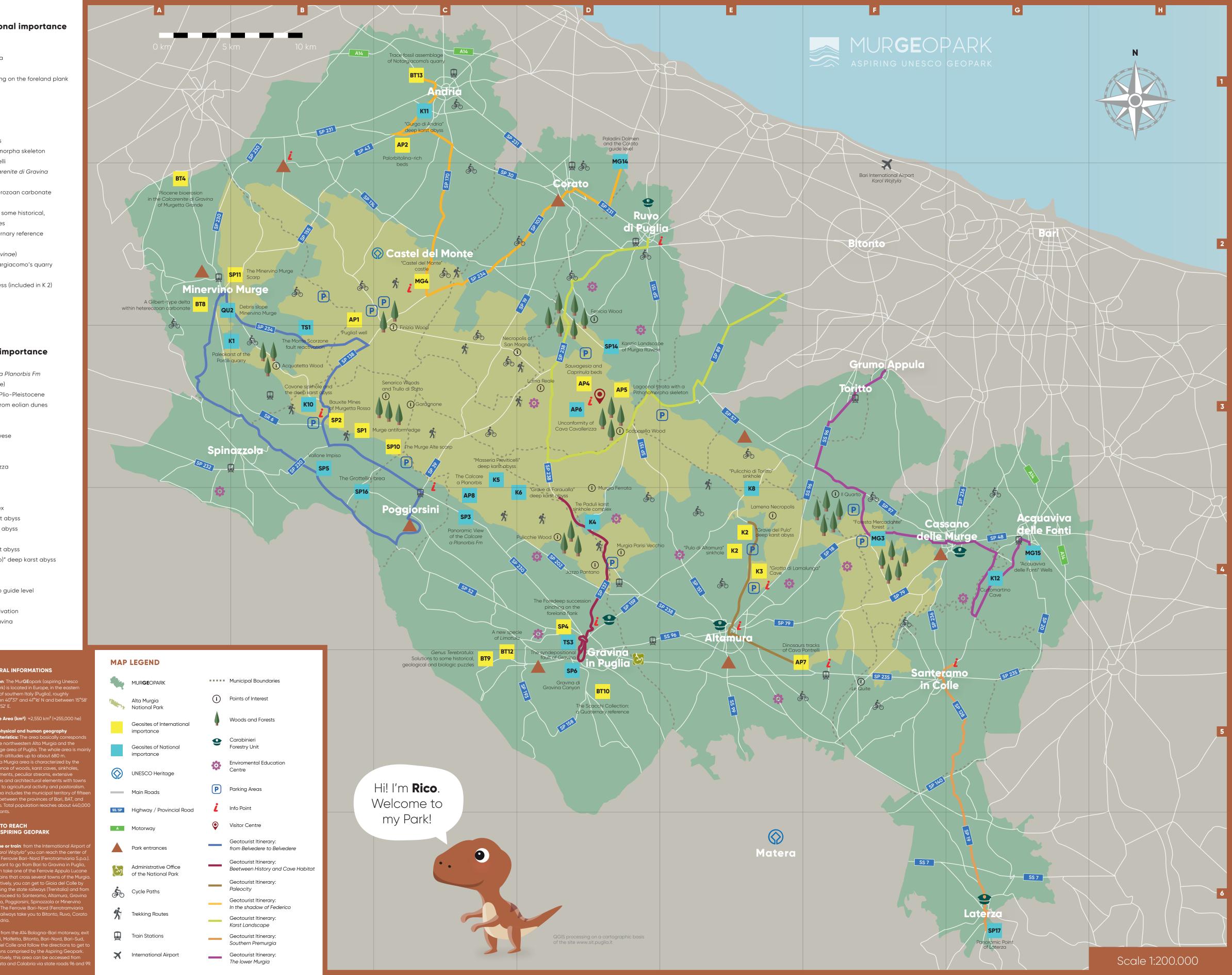
Geosites of National importance

SP3 Panoramic view of the Calcare a Planorbis Fm (lacustrine carbonate, Oligocene) SP5 Vallone Impiso: a transgressive Plio-Pleistocene

- heterozoan carbonate system from eolian dunes to offshore
- SP6 Gravina di Gravina Canyon
- SP14 Karstic landscape of Murgia Ruvese
- SP16 The Grottellini area
- SP17 Panoramic point of Laterza
- AP6 Unconformity of Cava Cavallerizza
- AP8 The Calcare a Planorbis
- QU2 Debris slope Minervino Murge
- K1 Paleokarst at the Porcili quarry
- K4 Tre Paduli karst sinkhole complex
- K5 "Masseria Previticelli" deep karst abyss
- К6 "Grave di Faraualla" deep karst abyss
- K8 "Pulicchio di Toritto" sinkhole
- K10 Cavone sinkhole and deep karst abyss
- "Gurgo di Andria (Gurgo Ruotolo)" deep karst abyss K11
- K12 Curtomartino Cave
- MG3 "Foresta Mercadante" forest
- MG14 Paladini Dolmen and the Corato guide level
- MG15 "Acquaviva delle Fonti" wells
- TS1 The Monte Scorzone fault reactivation
- TS3 The syndepositional fault of Gravina



	GENERAL INFORMATIONS
	Location : The Mur GE opark (aspiring Unesco Geopark) is located in Europe, in the eastern sector of southern Italy (Puglia), roughly between 40°37' and 41°16' N and between 15°58 and 16°52' E.
	Surface Area (km²) : ≈2,550 km² (≈255,000 he)
N	Short physical and human geography characteristics: The area basically corresponds with the northwestern Alta Murgia and the Premurge area of Puglia. The whole area is main hilly, with altitudes up to about 680 m. The Alta Murgia area is characterized by the occurrence of woods, karst caves, sinkholes, escarpments, peculiar streams, extensive pastures and architectural elements with towns related to agricultural activity and pastoralism. The area includes the municipal territory of fifte towns between the provinces of Bari, BAT, and Taranto. Total population reaches about 440,00 inhabitants.
	HOW TO REACH THE ASPIRING GEOPARK
	By plane or train : from the International Airport Bari <i>"Karol Wojtyla"</i> you can reach the center o Bari by Ferrovie Bari-Nord (Ferrotramviaria S.p.c. If you want to go from Bari to Gravina in Puglia, you can take one of the Ferrovie Appulo Lucane (FAL) trains that cross several towns of the Murg Alternatively, you can get to Gioia del Colle by train using the state railways (Trenitalia) and fro there proceed to Santeramo, Altamura, Gravino in Puglia, Poggiorsini, Spinazzola or Minervino Murge. The Ferrovie Bari-Nord (Ferrotramviaria S.p.a.) railways take you to Bitonto, Ruvo, Corat and Andria.
MUR GE OPARK	By car: from the A14 Bologna-Bari motorway, ex at Trani, Molfetta, Bitonto, Bari-Nord, Bari-Sud, Gioia del Colle and follow the directions to get the towns comprised by the Aspiring Geopark. Alternatively, this area can be accessed from Desiliated and Calabian to the accessed for





GEOLOGICAL GLOSSARY

Geology: A science that studies the planet Earth with reference to its composition, structure and configuration, its surface and the processes operating on it, seeking to gain knowledge of the evolution it has undergone since the very beginnings of its formation (around 4.7 billion years ago). It constitutes a point of convergence of several disciplines (earth sciences). It has strong links with physics (geophysics), chemistry (geochemistry) and planetology, as well as with all disciplines related to the natural sciences, such as physical geography and biology.

Source: Enciclopedia TRECCANI

Adria: Oceanic-type tectonic plate that surfaced in the ancient Tethys Sea during the Mesozoic Era. Today it lies submerged under the current Mediterranean Sea and Italian peninsula, hence the name Adriatic Sea. Its residual emerged patches surface in Apulia and the Istrian Karst. Its sediments, formed in a tropical sea in a carbonate platform environment, constitute the entire Murgian Highlands.

Source: Application Dossier Murge aUGGp

Geopark: An area with a geological and geomorphological heritage that is significant in terms of rarity, scientific interest, aesthetic appeal and educational value. Its identity is linked to geology and enriched by its natural and cultural heritage. It includes geosites of geological, archaeological, ecological, historical and cultural interest. It enhances the geological and geomorphological heritage by promoting sustainable development, environmental education, training, increasing scientific

research in the various disciplines of Earth Sciences and sustainable tourism or geotourism. It favours geological heritage conservation strategies that do not exclude man from enjoying the environment. It fights climate change and embraces sustainability goals. It is managed by a coherent management structure, which has adopted a sustainable and durable economic development strategy. It involves inhabitants, authorities, public organisations and businesses in the management and enhancement of geological sites through a strategy of protection, education and sustainable development, aiming at local economic progress. It improves the natural environment and thus the lives of the people living in it.

Source: UNESCO

Geosite: It is an area that includes one or more geological elements that take on different scientific characteristics in relation to the surrounding areas as well as to its palaeo-ethno-anthropological features. This territorial element bears witness to significant geological events and/or processes at the local, regional or global scale, is protected by a Geopark or public reference body and is characterized by rare or exclusive features compared to the reference scale.

> Source: Publication "Geositi della Puglia" (Geosites of Apulia)



from Belvedere to **Belvedere**

A tour of the most evocative geological landscapes of the Alta Murgia Park, vincluding villages and viewpoints, rock-hewn churches, quarries, caves and forests. Minervino Murge is also called the "balcony of Puglia", with breathtaking landscapes, both natural and man-made, such as the huge limestone quarries. Here we find Lama Matitani, which cuts through the stratifications of the Murgian Highlands, and the Michaelic Cult cave of Saint Michael's Grotto. Spinazzola is added to the itinerary, with sensational views of the Premurgia Bradanica to the north and splendid views of Mount Vulture, both from the historic Rocchetta Sant'Antonio railway and the rocky archaeological site of Grottelline. The jewel in the crown of this area are the red shades of the Bauxite mines in the Murgetta Rossa district and the "invisible" Garagnone Castle with its Rocca Carsica. To the south of Garagnone, we also find the small town of **Poggiorsini** with its panoramic Belvedere (geosite of regional importance) overlooking the southern Bradanic Trough.

Where

Minervino Murge - Spinazzola - Poggiorsini

Other Interests

Archaeology; Speleology; Religion; Architecture; Biodiversity; Ancient History; Modern History; Food and Wine



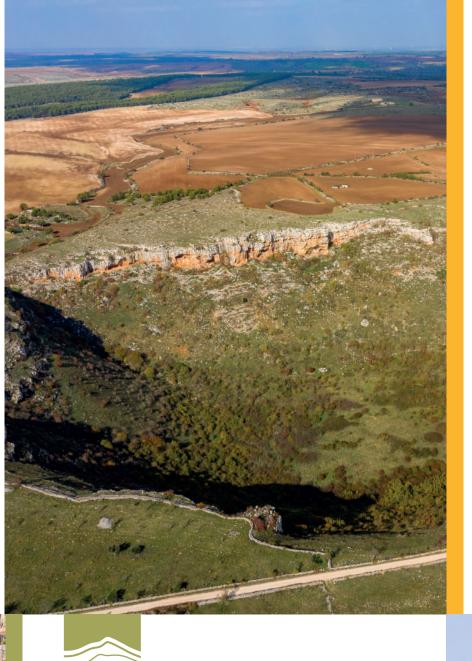
beetween History *A and* Habitat Cave

Gravina in Puglia is known as the "City of Water and Stone" because of its outcropping rock and its canyon-like fluvial incision also known as 'La Gravina' (The Ravine). The Gravina Canyon was modelled by water and the uplift of the Murge in the Quaternary period. Its history is lost in time, where we find marine sediments spread in sections all along the ravine, as an evolution of the whole Adriatic region. These sediments are rich in fossils, the rocks allow the excavation and modelling of epigaean and hypogean settlements ranging from the Palaeolithic to the Bronze Age. The landscape is a succession of several carvings in the rock on which we find an enormous heritage culminating in its architecture. Aqueducts and underground canals are able to supply the city even in times of low rainfall. Gravina in Puglia was the birthplace of one of the most important Italian geologists of the 19th century: Arcangelo Scacchi.



(i)

Gravina in Puglia





Paleocity

From the Dinosaurs to the Neanderthal to the Cold War

Surrounded by the green hills and steep escarpments of the Alta Murgia of Bari, Altamura, also known as the "Lioness of Apulia", is the city of the Romanesque Federician Cathedral and PDO (Protected Designation of Origin) bread. Its territory, inhabited since prehistoric times, as evidenced by the Megalithic Walls (Alum Murum in Germanic Latin means "Ancient Wall"), was re-founded in medieval times by Emperor Frederick II of Swabia. Altamura tells stories of dinosaurs, with one of the largest footprint sites in the world, stories of prehistoric men, of epigean and hypogean karst environments such as the huge Pulo sinkhole or the Faraualla and Preveticelli caves. It is also home to classical necropolises, medieval stone architecture and war installations from the First and Second World Wars, in a fascinating historical landscape, rich in biodiversity and unique agronomic varieties, linked to the nature of the rocky substrate where they reside.



alaeoanthropology; Archaeology; Speleology; Architecture; Biodiversity; Ancient History; Modern History; Food and Wine



Other Interests Archaeology; Urban Speleology; Literature; Architecture; Biodiversity; Ancient History; Modern History; Food and Wine

in the **Shadow** *of* **Federico**

The memory of Frederick II of Swabia, the "Stupor Mundi", is present everywhere on the territory of the Alta Murgia National Park. Through this itinerary you will be able to look for evidence and hints linked to the Holy Roman Emperor, while being captured by beautiful colours and shapes. In the Andria area, you will be able to discover the Gurgo geosite, one of the largest karstic dolines in Apulia, and Castel del Monte. The octagonal fortress, a UNESCO World Heritage Site since 1996, possesses exceptional universal value due to the perfection of its shapes, its harmony and the fusion of various cultural elements. It was built with blocks of Murgian limestone and embellished with architectural details made of rock from the Gargano Promontory. The itinerary then continues to **Corato**, where a section of the Appian Way and Trajan Way can be travelled along with typical karst landscapes, poorly marked lamas and traditional regimentation of surface waters with dry-stone walls. Olive and almond monocultures predominate in this area, as well as ephemeral and steppe-like spontaneous vegetation that explodes into ephemeral river incisions in the Mediterranean scrub. Deviating briefly from the itinerary, you can reach the Necropolis of tumulus tombs from the Late Bronze Age (7th - 6th century B.C.) located in the "San Magno" district.

• Where Andria - Corato

Other Interests *(i)*

Archaeology; Speleology; Architecture; Biodiversity; Ancient History; Modern History; Religion; Food and Wine



5 Karst landscape of the **Ruvo di Puglia Murgia**

The itinerary develops mainly in the **Ruvo di Puglia** area, between the ancient village and the surrounding Murgian territory. A journey among large masserie and sheep shelters in which ancient legends and traditions linked to sheep-farming and rural activities are intertwined, like collecting scarce water resources by means of limestone rocks, intercepting deep water flaps typical of karst territories, or creating rainwater tanks in the most unthinkable places. The itinerary continues towards **Bitonto** at Jazzo Pietre Tagliate, a jewel of rural architecture with its still clearly visible perimeter walls and farmhouses. Reforestation, which provides shade and mitigates soil erosion during periods of intense - and yet ephemeral - rainfall, interrupts the monotony of the Murgian pastures and channels water into an immense lama: the Tifris River. This incision joins the Park to the Adriatic Sea serving as an ecological corridor: it starts in Ruvo di Puglia, takes on the form of a canyon in Bitonto and flows into Bari under the name Lama Balice. Today, it is the largest protected regional park in the Province of Bari.



Ruvo di Puglia - Bitonto

Altri interessi

Geomorphology; Karst Phenomena; Stratigraphy; Palaeontology; Hydrogeology; Mineralogy



A tour dedicated to the multi-faceted karst rock and its passage through the southernmost area of the park from north to south towards the deposits of the Bradanic Trough. This territory is shaped by the action of water and the hand of man. Here you will find a landscape riddled with ravines and deep cavities, scattered with stone constructions such as trulli and dry-stone walls. The landscape between Santeramo in Colle and Laterza is unique, almost "lunar", with progressive descending terraces separated by faults and flat terraced deposits overlooking deep and impervious incisions such as the ravines. This diversity encompasses a rich natural, faunal and geological heritage. The main issue here, too, is man's ability to make use of the few sources of water for traditional agriculture and animal husbandry, which today becomes an example of sustainability in maintaining the precarious planetary climate.



Other Interests

Archaeology; Speleology; Architecture; Biodiversity; Ancient History; Modern History; Religion; Food and Wine



7 the Lower Murgia

Carbonate and stony landscape affected by peculiar karst phenomena, such as sinkholes, lamas, and caves of great charm and sometimes inhabited by man in prehistoric times. The area. including the water basin that flows into Bari (Conca di Bari), just like the whole park, preserves rock sculptures of incredible visual impact, shaped by water and human activity with important reforestation works aimed at mitigating the power of water in rainy seasons. This is the raison d'être of the Foresta Mercadante (forest), a precious Apulian green lung planted in the 1920s to fight soil erosion and the risk of flooding. The route touches on Grumo Appula with its lamas, Toritto with its olive and almond trees, Cassano Murge with its forest and Acquaviva delle Fonti with its underground wells that give the town its name, thus outlining the outflow of water from the southern portion of the Park to the Adriatic Sea, creating an endless network of ecological corridors for fauna and flora.

Grumo Appula - Toritto - Cassano Murge -Acquaviva delle Fonti

Other Interests

Palaeoanthropology; Archaeology; Speleology; Architecture; Biodiversity; Ancient History; Modern History; Food and Wine



Published in August 2022 by ENTE PARCO NAZIONALE DELL'ALTA MURGIA Via Firenze, 10 - 70024 Gravina in Puglia (BA() Tel. +39 080 326 2268 arcoaltamurgia.it - info@parcoaltamurgia.i

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tourist cartography on a scale 1:200.000



^{dell'}alta murgia

mplified Edition of the Geotourist Map - 2022 Edition Photo: Mario Brambilla - Domenico Martinelli Printed by: 3ESSE s.r.l.

USEFUL CONTACTS

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ENVIROMENTAL EMERGENCY NUMBERS

ALTA MURGIA NATIONAL PARK VISITOR CENTRE Torre dei Guardiani - Contrada Ferrata Jazzo Rosso, Ruvo di Puglia (BA) Tel. 080 326 2268

Adria: the (almost) lost Continent

The Alta Murgia National Park and the Apulian Premurge are part of a karst territory exceptionally rich in "geosites", which are located on the surface and underground. The word geosite stands for a "site of geological interest" and represents an element of geodiversity of international, national and local value, based on its uniqueness in the geological history of the planet. As a whole, the area including the Alta Murgia and the Premurge represent a unique element of geodiversity in the world, being the last entrenched patch (along with the Istrian Karst) of an old continent: the Adria. In fact, the entire region corresponds to a portion of the Mediterranean basin where the old Adria Plate "survives". This continent disappeared almos completely between Africa and Europe due to their convergence. This characteristic relevation contributed to the Alta Murgia National Park being presented as a candidate as a Unesco Aspiring Geopark.

