

SALSE DI NIRANO Regional Nature Reserve



The Salse di Nirano Nature Reserve protects the largest and most peculiar Salse compound in the region, one of the best preserved in Italy and one of the most important in Europe. The path of protection and enhancement, initiated by the Municipality of Fiorano already since 1977 with the acquisition of the areas affected by the sludge and the establishment of constraints of non-buildability and protection, led in March 1982 to the establishment of the Salse di Nirano Regional Nature Reserve, first nature reserve created by the Emilia Romagna Region.

In 2004, on the basis of the Habitat Directive, the European Commission identified in the entire area of the Reserve and beyond, a Site of Community Importance and a Special Area of Conservation (SAC IT 4040007 "Salse di Nirano"), covering 371 hectares, characterized by the presence of 7 natural and semi-natural habitats, as well as animal species and plant species to be protected. This territory has thus become part of the European ecological network (Directive 92/43/EEC), Network Natura 2000. In 2016, there was the important credit as a 'priority geo-site' for the presence not only of mud volcanoes, but also gullies. And finally, in September 2021, the Reserve became part of the Unesco Biosphere Reserve of the Tuscan-Emilian Apennines.

Since October 2016, as a result of Regional Law 13/2015, the Salse di Nirano Reserve has been managed by the Ente Parchi Emilia Centrale, in collaboration with the Municipality of Fiorano Modenese, to continue to protect a unique heritage of biodiversity, enhancing its knowledge and sustainable use, and deepen with research and studies, including international ones, the many issues still to be investigated. Today, the Reserve extends over more than 200 hectares, of which about 7 are fully protected, where cones and pools can be observed, a destination for scholars and visitors from all over Italy and Europe.

CA' TASSI

The Salse are phenomena of 'sedimentary volcanism' that consist of the emission of cold mud at the surface, generated by the rising of salty water mixed with gas (mostly methane and carbon dioxide). Due to the presence of gas, the mud appears to bubble up, but it actually emerges at room temperature. Mud volcanoes are still a littleknown phenomenon even though they are extremely widespread both on the Earth's surface and on the seabed; it is believed that this kind of volcanoes may even be present on Mars. The name 'Salsa' derives from the high salt content of deep waters, the origin of which is linked to the presence of the Adriatic Sea that occupied the current Po Valley until about a million years ago.

These salt waters formed within the sediments several million years ago in the ancient Adriatic Sea and can therefore be considered fossil waters. The hydrocarbons present, mainly methane and to a small extent oil, were also generated at great depths by the anaerobic decomposition of organic remains of plant and animal origin. It is thought that the gas deposit that feeds the various apparatuses is located a few kilometres in depth and loses its contents due to the presence of a fault. The gas can then rise to the surface through the fractured rock around the fault and carry the mud with it. In the Nirano field we find about twenty apparatuses, either in the shape of cones (griffins) or of pools (which develop only at ground level), which are fed by reservoirs a few dozen metres deep whose hydraulic system is connected to the aforementioned fault zone.

Few people know that the establishment of the Reserve was actually not to enhance the mud volcanoes, but to protect herbaceous species 15-80 cm tall, with spike-shaped inflorescences, apparently insignificant, but of high conservation value: Puccinellia fasciculata. The species is myohalophilic (fond of muddy and salty soils), and grows on brackish soils. The generic name is dedicated to the Tuscan botanist Benedetto Puccinelli (1808-1850). Its presence in the Salse di Nirano area, in the foothills far from coastal areas, aroused curiosity in many scholars from the beginning of the 20th century. Precisely to protect its presence in Nirano, the Salse di Nirano Nature Reserve was established in 1982: Puccinellia in fact represents the 'flagship species' of the protected area. Its presence in this area still raises many questions, linked to the time and manner of its arrival in the Reserve, more than 100 kilometres from the sea, its natural habitat. For the time being, the only certain fact is that it lives well near the mud volcanoes thanks to the slight salinity of the surrounding soil.

CA' ROSSA



RISERVA NATURALE REGIONALE DELLE SALSE DI NIRANO **Comune di Fiorano Modenese** Ufficio Ambiente - Via Vittorio Veneto 27/A **O** 0536/833276 🕒 ambiente@fiorano.it Shttps://www.fioranoturismo.it/it/natura/salse-di-nirano G @riserva.nirano Ente Parchi Emilia Centrale **O** 059/209311 Swww.parchiemiliacentrale.it **BOOKING OF EDUCATIONAL COURSES AND EVENTS SECRETARIAT** O522/343238 Salse.nirano@fiorano.it 342/8677118 Centro Visite Ca' Tassi Via Rio Salse 2° Tronco, 7 - Nirano di Fiorano Modenese (MO) O536/921214 Ecomuseo Ca' Rossa Via Rio Salse 2° Tronco, 2 - Nirano di Fiorano Modenese (MO) O536/1856424 Marzia Conventi - Comune di Fiorano M.se, Riserva Naturale Salse di Nirano Texts Gabriele Ronchetti - Ente Parchi Emilia Centrale Antonello Piombo - Alma Mater Studiorum, Università di Bologna Marco Antonellini - Alma Mater Studiorum, Università di Bologna Chiara Campion - Ecosapiens

Photos

INFORMATION

AND CONTACT DETAILS



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The building called Ca' Tassi (Tassi House), so named in memory of the family that originally occupied the structure, overlooks the Salse di Nirano field and offers a beautiful overview of the mud volcanoes from the courtyard. Ca' Tassi is a significant example of an agricultural 'dead door' building, a typical rural building widespread in the agricultural area of Modena and Reggio Emilia, which performed various residential-productive and service functions at the same time. It was likely built at the beginning of the 20th century, while the structure known as the "barchessa", built after the First World War and used as a barn and shelter for agricultural products, is posthumous. Another classic building in the farmyard is the oven, essential for food and survival of the peasant family, still functioning. Since its acquisition by the municipality of Fiorano in July 1989, the structure has been restored according to the dictates of green building. The renovation work was completed in 1999, creating the Visitor Centre and Environmental Education Centre of the Reserve, today CEAS Pedecollinare.

Activities aimed at protecting and enhancing the protected area are carried out inside the building. In fact, it is the hub of the services offered by the Salse di Nirano Nature Reserve, where it is possible to receive information and purchase illustrative and didactic materials, observe the natural and ornithological exhibition, experiment in a simple laboratory how fossils and minerals are structured, and learn about the special features of the Reserve through multimedia educational tools (displays, interactive games and educational notice boards). Outside, it is possible to stop for a picnic in the area equipped with seats and tables.

In 2007, a new photovoltaic system was installed, equipped with a data display capable of informing on the electricity produced and the amount of carbon dioxide not released into the atmosphere. The facility has been included by the Italian Multiple Sclerosis Association (AISM) in the Easy Go Out portal, where one can find leisure places accessible to all, for inclusive tourism.

The building known as Ca' Rossa (Red House), so named by the colour of its exterior, was purchased by the Municipality of Fiorano in 1999, refurbished and opened to the public in 2010. Ca' Rossa represents a significant example of an agricultural 'dead door' building of 19th century origin. The building of historical interest continues to preserve in its form and architecture the historical-architectural, cultural and witnessing value of the realities that characterised the countryside around Reggio Emilia and Modena. In 2014, the Eco-museum was established here, meant as a 'pact with which a community takes care of its territory', to conserve and protect peculiarities, material and immaterial resources, culture and traditions of the territory and the people who inhabited it. Customs and traditions of the territory are recalled through displays, photographs, agricultural tools, documents and interactive and multimedia tools. Thanks to the project financed by the Emilia-Romagna Region, the entire structure can be connected via Internet to the National Network of Ecomuseums and is equipped with a controlled system of free public browsing.

There are two picnic areas equipped with seating with tables outside. Not far away is the first Italian observation apiary AIAAR (Associazione Italiana Allevatori Api Regine), since 2020, with the function of protecting Apis mellifera, supporting research measures to safeguard biodiversity and native species. The aim is to promote the production of honey in the Reserve as a quality product by raising awareness among users of the protected area of the ecosystem and fundamental value of bees. The structure has been included by the Italian Multiple Sclerosis Association (AISM) in the Easy Go Out portal, where one can find leisure places accessible to all, for inclusive tourism.

From Ca' Rossa starts the path for the visually impaired and those with motor disabilities, which, through the 'tunnel of sounds', leads to 'Open sites', the access path to the integral area, designed to help people with disabilities discover the mud volcanoes through Braille and wheelchair-accessible pathways.

Stefania Spaggiari - Comune di Fiorano M.se Annalisa Vandelli, Enrico Rossi, Franco Franchini, Luciano Callegari, Miro Landoni, Pino Piccardo

SALSE THROUGHOUT HISTORY

CASTLE OF SPEZZANO MUSEUM OF CERAMICS MUNICIPAL BALSAMIC VINEGAR CELLAR

It is not difficult to suppose that the phenomenon of the Salse aroused in ancient man a mysterious fascination and a reverential cult, going so far as to develop the hypothesis of an oracular type of cult linked to the goddess Minerva. The first literary sources, however, date back to Pliny the Elder, who in his Naturalis historia dwells on the spectacular and probably fantastic characteristics of the Salse, hinting at the clash between two mountains... and who knows whether Dante himself visited the Salse di Nirano, gathering inspiration here for the phrase "Ma che ti mena a sì pungenti salse?" (what brings you to such stinging Salse?) in Canto XVIII of Inferno. From the 17th century onwards, the Salse were the subject of more in-depth studies, often still embellished with apocalyptic descriptions and fantastic colourings. In the most reliable report written by Abbot Lazzaro Spallanzani in 1793, the Salse di Nirano show an activity very similar to that of today, but it is with Abbot Antonio Stoppani, who studied the phenomenon of the Salse in 1864-1865, that we have a detailed description in the famous twentieth-century edition of 'Bel Paese' where we read "ed eccovi una salsa, un volcano pigmeo" (and here is a Salsa, a pygmy volcano).

THE ROUTE OF MUD VOLCANOES

The Mud Volcanoes Route is an emotional journey connecting places and excellences through the geological phenomenon of mud volcanoes, known as Salse. They represent a widespread geological emergency along the entire Apennine arc. In order to create a geophysical catalogue of these tourist and scientific points of interest, a promotion and enhancement agreement was signed between six municipalities in the areas of Modena and Reggio Emilia. The tourist route winds for almost 70 kilometres touching over 50 points of interest among villages, historical residences, archaeological sites and naturalistic and environmental excellences through the municipalities of Fiorano Modenese, Maranello (Salse di Puianello), Sassuolo (paleo-Salsa di Montegibbio), Castellarano, Scandiano and Viano (Salse di Regnano and Casola Querciola). On the "Fiorano Turismo" website it is possible to gather information to download the dedicated app and purchase the excursion map complete with all the in-depth information.

ACCESS AND CODE OF CONDUCT

Spezzano Castle, immersed in the historic park four kilometres away from the Salse, is a Renaissance palace with an elegant porticoed courtyard and the Sala delle vedute frescoed with views of the Pio State. The castle is home to the Museum of Ceramics, which tells production techniques from the Neolithic to the industrial tile with interactive stories of the workers in the manpower section. Prisons and the Municipal Vinegar Cellar can be visited in the tower. An easy pedestrian-cycle path along the Fossa stream connects the castle with the Salse.

CASTELLO di SPEZZANO Via del castello 12 - 41042 Spezzano MO - fb e lg/castellodiSpezzano Opening times: March - October: Saturday and Sunday 3-7 pm, November: Saturday and Sunday 3-6 pm Free admission

INFO Tel. +39 833412 castellospezzano@gmail.com www.fioranoturismo.it Guided tours for groups, schools, workshops and entertainments, by appointments: Tel. +39 335 440372



SANCTUARY OF THE BLESSED **VIRGIN OF FIORANO**

OPENING TIMES

The Salse are always open. The Nature Reserve is freely accessible for visits, walks and independent routes, in compliance with the regulations of the protected area.

It is possible to attend activities (free of charge unless otherwise indicated) that take place on holidays and weekends, from February to December; the events calendar is available on the Reserve website. IThe Visitor Centres are open on Saturdays, Sundays and holidays according to the following schedule: • FROM MARCH TO SEPTEMBER: Saturdays 3pm-5pm; Sundays and holidays 10am-12.30pm / 3pm-6.30pm;

every first Sunday of the month free guided tour at 4pm with meeting point at Cà Rossa. • OCTOBER, NOVEMBER, FEBRUARY: Saturdays 3pm-5pm; Sundays and holidays 10am-12.30pm / 2.30pm-

4.30pm; every first Sunday of the month free guided tour at 10.30am, meeting point at Cà Rossa.

In the area of the Reserve it is not possible to:

- damage lutivome systems: • damaging, collecting and removing species of spontaneous herbaceous flora or parts of them;
- remove mud;
- exit the paths specifically designated and marked for the visit;
- camping or staying longer than the time required for the visit within the Integral Nature Reserve Area (lutivome area):
- access to the Integral Nature Reserve Area in the event of rain and at least 24 hours after such a weather event;
- damaging, taking and disturbing fauna, collecting and damaging eggs, nests and burrows;
- fly over the Reserve at low altitude, with tourist planes, ultralight aircraft and powered hang-gliders; • park along the road axis Via Rio Salse - Via Nuova del Gazzolo (parked vehicles will be removed at the transgressor's expense):
- accessing and leading off-leash dogs;
- picking mushrooms and truffles;
- use noise or light sources that disturb wildlife.

We must not forget that the Salse are a geo-site of unique importance, a fine specimen of that biodiversity whose loss would be a serious cultural and economic damage. They are also a delicate ecosystem and should therefore be admired and respected.

A Baroque Mariana Basilica, it guards a 15th-century fresco of the Virgin. The ex-voto collection can be visited upon reservation. Tel. +39 0536 830042 bv.castello@gmail.com Piazza Giovanni Paolo II, 4 - 41042 Fiorano Modenese (MO)

For other tourism experiences in the area: IAT info turistiche tel. +39 0536 073036 info@maranelloplus.com - www.fioranoturismo.it - www.maranelloplus.com





EXCURSION ROUTES

THEMED ITINERARIES

N. 1 - TOUR OF THE SALSE - 2h

This is the panoramic tour of the Salse di Nirano Nature Reserve. It winds around the Salse basin, allowing you to observe the lutivomi and enjoy the view of the surrounding valleys.

N. 2 - HEDGEHOG TRAIL - 30'

The path starts from the car park of the Reserve, and runs along the Salse municipal road. Accessible to pedestrians and people with disabilities.

N. 3 - GHEPPIO PATH - 2h

It runs along the course of the Rio Chianca river, from which it is possible to observe the surrounding gullies from scenic viewpoints

N. 4 - OWL PATH - 30'

Access road to Ca' Tassi Visitor Centre. It can only be used by pedestrians and the Reserve's service and emergency vehicles.

N. 5 - BADGER PATH - 40'

Connecting route between Ca' Tassi Visitor Centre and 'via Nuova del Gazzolo' road.

N. 6 - DEER PATH - 1h20

It joins route No. 1, providing a wide view of the Nature Reserve and the surrounding valleys.

N. 7 - NEWTS PATH - 1h30'

It runs along the Rio delle Salse/Rio Serra valley floor, up to two small artificial lakes where it is possible to observe avifauna and some newts; then continues along the ridge.

N 8 - OPEN SITES TRAIL - 15'

A wooden elevated path that runs for 150 m within the Salse field. It is the most strategic path in the Reserve to enjoy the "bubble up" phenomenon. It has no architectural barriers and is equipped with signs in English, Braille and Italian describing the phenomenon of the Salse and the environmental emergencies that make the Reserve an area of naturalistic value. Accessible to pedestrians and people with disabilities.

N. 9 - DRAGONFLY PATH - 30'

Path leading to Ca' Rossa and connecting to the Salse ground. It runs along the edge of 2 habitats of conservation interest and crosses a wetland area with facilities for spotting fauna. Part of the route is designed for use by disabled people

Recommended period: autumn, spring Accessibility: adults and children

Itinerary a)

BEES AND BIODIVERSITY Walking time - 1h

Educational trail with 3 display panels to learn how a bee is, what are the products of the hive and the importance of bees' ecological role as bio-indicators of environmental quality. It takes place on the edge of the integral zone.

Itinerary b)

WILD FLORA AND PROTECTED SPECIES

Walking time - 1h Educational trail with 3 display panels to discover the flora and vegetation features of the area with many curiosities ... such as guessing the weather forecast by observing the flowers. It develops mainly around Cà Tassi.

Itinerary c) WATER IN ALL THE "SALSE'

Walking time - 3h

Educational trail with 4 display panels to learn about the irrigation basins and wetlands in the Reserve area and to appreciate and maintain the water resource. It develops along hiking routes no. 3 and no. 7

Itinerary d)

MEMORABLE TASTES Walking time - 1h30'

An educational trail with 8 display panels to rediscover cultivation techniques of the past and "taste" ancient cultivars with a forgotten flavour such as lambruscone (or Fiorano olive lambrusco), Nirano caper, campanina apple or volpina pear, true relics of arboreal archaeology with an unattractive appearance but an intense and highly valuable flavour. It takes place in the test fields of particular cultivars "campo catalogo".

ltinerary e)

THE SOUNDS OF THE RESERVE Walking time - 1h

Educational trail with 1 display panel and various furnishings to listen to the sounds of the reserve and independently reproduce the noises of nature. It develops along path no. 9

EDUCATIONAL ITINERARIES



It is possible to request, with adequate advance notice and for a minimum group size of 15 people, a guided tour or an experiential-didactic workshop for kindergarten, primary, secondary I and II grade school classes and for organised groups. Activities range from guided tours, to geological and scientific workshops, to sport orienteering. Visits and workshops all last approximately 2 hours and cost €6.00 per participant.

To book, please contact the office at +39 0522/343238 or send an e-mail to salse.nirano@ fiorano.it.

Possible proposals include:

EXPLORING THE RESERVE

Guided tour - 2h Target group: pre-school, primary, I and II grade secondary school, organised groups

SUBSOIL MISSION Themed guided tour - 2h

Target group: primary and secondary schools

EXPERIENTIAL AND EDUCATIONAL WORKSHOPS - 2h

Bi Bee and the Honey Factory - Target: pre-school, primary school and 1st grade secondary school The Reserve in outdoor education - Target: pre-school, primary school and 1st grade secondary school The Mystery of the Mud Volcanoes - Target: pre-school, primary school and 1st grade secondary school The terrestrial expert - Target: primary and 1st grade secondary school My first orienteering - Target: primary and 1st grade secondary school The great survival game - Target: primary and 1st grade secondary schools Bioblitz - Target: 1st and 2nd grade secondary school Orienteering in Salsa - Target: 1st and 2nd grade secondary school

CENTRAL EMILIA PARKS AUTHORITY



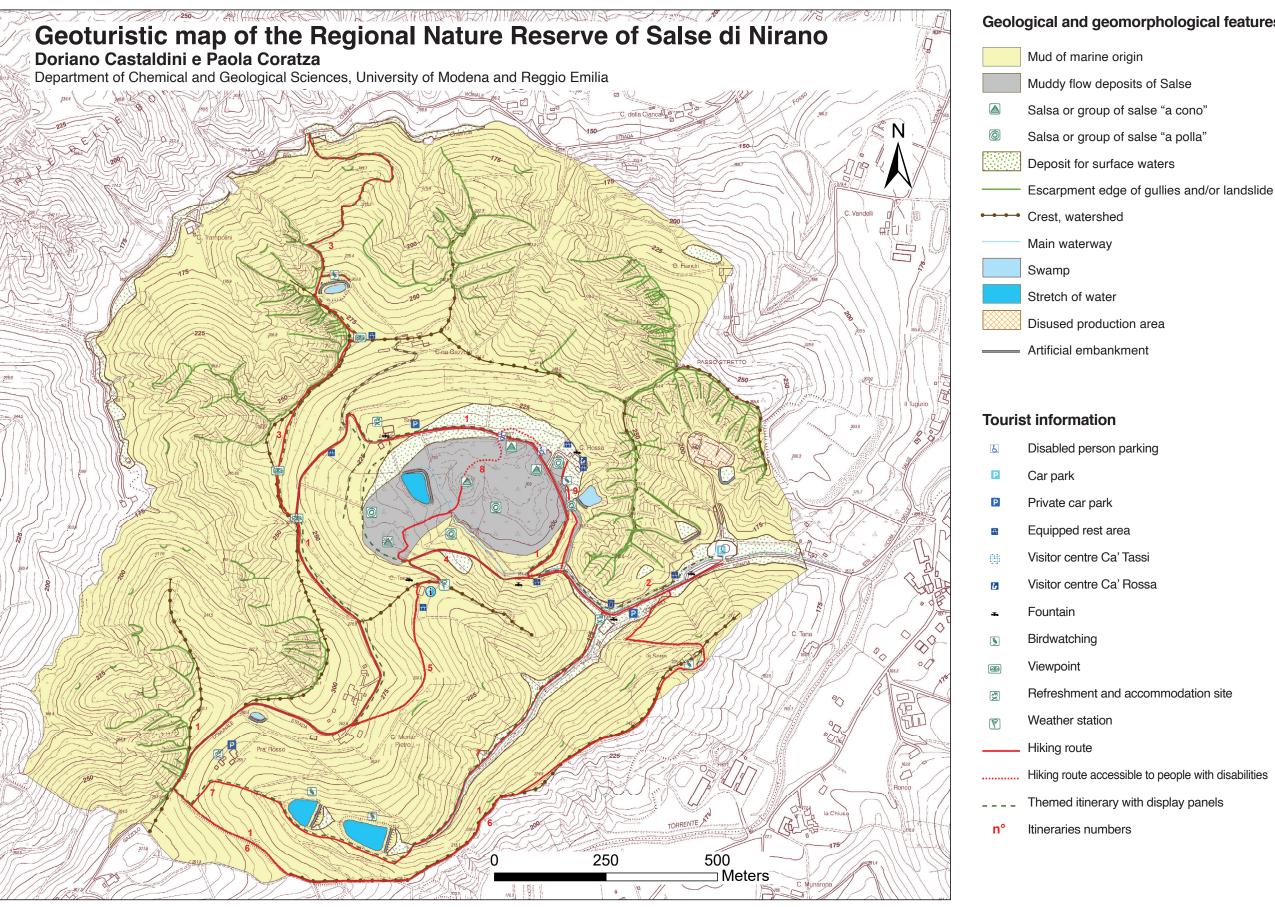
The Authority for Parks and Biodiversity in Central Emilia, pursuant to the Regional Law of Emilia-Romagna n. 24/2011 which established it, is the managing authority for the protection tion of the biodiversity of the Salse di Nirano nature reserve and 7 other protected areas (the Frignano and Sassi di Roccamalatina regional parks; the Cassa di Espansione nature reserves of the Secchia River, Rupe di Campotrera, Fontanili di Corte Valle Re, Sassoguidano, the Collina Reggiana-Terre di Matilde protected landscape) and 13 sites of the Natura 2000 network (Special Area of Conservation-SAC and Special Protection Areas-SPA) of the provinces of Modena and Reggio Emilia.

It is a vast territory that ranges from the plain to the hill to the mountain, characterized by an extraordinary naturalistic and landscape richness that, combined with traditions, historicalarchitectural testimonies and valuable local products, result in a wide variety of itineraries, activities and tourist proposals suitable for everyone, in every season of the year.

The Salse di Nirano Nature Reserve is managed by the Central Emilia Parks Authority in agreement with the Municipality of Fiorano Modenese. In particular, the Authority deals with environmental education activities in an integrated manner with local realities through its own Center for Education to Sustainability (CEAS) and authorization activities on clearance, compliance opinions, impact assessments and permits, in addition to the coordination of actions related to specific projects in the naturalistic and tourist fields such as URCA Pro-Emys and CETS.

The legal and administrative headquarters of the Central Emilia Parks Authority are located in Modena, but the decentralised offices of Pievepelago, Guiglia (Pieve di Trebbio) and Rubiera are also operational, carrying out, among other things, information and supervision functions on the territory.





THE PROJECT LIFE URCA PROEMYS



The main goal of LIFE "URCA project (URgent Conservation Actions) pro Emys orbicularis in Italy and Slovenia" (www.urcaproemys.eu) is to improve the conservation status of the autochthonous pond turtle Emys orbicularis in Italy and Slovenia.

The Authority for Parks and Biodiversity Emilia Centrale is one of the 7 Italian partners of the project, whose long-term actions are planned in 55 Natura 2000 sites, including the Special Area of Conservation (SAC) Salse di Nirano (territorially wider than the Nature Reserve) where the Park Authority itself coordinates the specific interventions.

The actions of the project include: the restoration of the habitat of Emys orbicularis and its repopulation in nature; the control of the invasive alien species Trachemys scripta and other invasive tortoises; specialized training activities for technicians, operators and volunteers; an integrated national and cross-border management plan; a public information and awareness-raising campaign.

The project URCA pro-Emys is coordinated by WWF Italy, is co-financed by the program LIFE of the European Union and is running from October 2022 to September 2027.

Geological and geomorphological features

ECST - EUROPEAN CHARTER FOR SUSTAINABLE TOURISM

The ECST-European Charter for Sustainable Tourism (https://www.federparchi.it/pagina.php?id=27) is a certification awarded to Protected Areas that have submitted a programme of actions related to the principles of ecotourism and environmental sustainability. The main aim of the Charter is to increase the sustainable development and management of tourism in protected areas that takes into account the needs of environment, residents, local businesses and visitors.

The Protected Areas managed by the Authority for Parks and Biodiversity Emilia Centrale (including the Salse di Nirano Nature Reserve) were recognised by the ECST in January 2021, thus forming part of the "Sustainable European Destinations" network of Europarc (Phase 1). Following the actions coordinated by the Park Authority to complete Phase 2, the recognition of ECST to tour operators (accommodation facilities and guides) was achieved in 2022. In 2023, Phase 3 was finally launched, that is the certification of local tour operators for the realization of sustainable tourism packages.



THE UNESCO TUSCAN-EMILIAN **APENNINE BIOSPHERE RESERVE**

The Tuscan-Emilian Apennine Biosphere Reserve (www.mabappennino.it) is part of the UNESCO Program "Man and the Biosphere" (Mab), born in 1971. "Biosphere Reserves" are areas of terrestrial, coastal and marine ecosystems in which an appropriate land management combines the conservation of the ecosystem and its biodiversity with the sustainable use of natural resources for the benefit of local communities.

The Tuscan-Emilian Apennine Biosphere Reserve was recognized by UNESCO in June 2015, in a territory embracing 34 municipalities distributed over 5 provinces and 2 regions: Parma, Reggio Emilia and Modena in Emilia-Romagna and Lucca and Massa Carrara in Tuscany, for an area of about 2,200 square kilometers. Subsequently, in September 2021 the UNESCO World Heritage Council approved the expansion of the MaB Reserve, which increased to 80 municipalities, doubling its extension to 5,000 square kilometers. arriving at the gates of the cities of Reggio Emilia and Parma, including the first hill and the Apennine Modenese and Reggiano.

A vast territory that has come to include 16 protected areas and 40 Natura 2000 sites, including the Salse di Nirano Nature Reserve.

