Crater degli Astroni National Nature Reserve

Crater degli Astroni, a volcanoe crater of 247 hectare near Naple’s city centre

Crater degli Astroni is an extinct volcano belonging to the greater Aagnano crater in the Phlegrean field caldera. With its 3600 years it is the youngest crater of the Phlegrean fields.

Most of the crater is covered in forest. At the bottom of the crater are three lakes (Lago Grande, Cofaniello Piccolo e Cofaniello Grande) and a number of small hills (Colle dell'Imperatore and Colle della Rotondella) formed during a series of volcanic eruptions.

Visitors to the Crater degli Astroni nature reserve may choose among a wide range of theme based trails: from the historical to geological, from the botanical to the zoological, every path has its own peculiarity but all are closely related.

Moreover, at the reserve Environment Education Centre (CEA) WWF staff organise educational activities both for schools and visitors along with the GEB (Giovani Esploratori del Bosco – Young Explorers of the Wood), laboratories organised during the Spring and Summer months for children and teenagers.

About Crater degli Astroni

The Crater degli Astroni Nature Reserve (Campania) is located on the western bound of the city of Naples even though most of its area falls under the municipal boundaries of Pozzuoli.

Crater degli Astroni is one of the few well-preserved craters of the whole Phlegrean fields. It represents what in geology is defined as a caldera, i.e. a large depression of the Earth’s surface today occupied by deep a thick and well-preserved woodland and lakes that makes the Phlegrean fields a unique place in the world. The Reserve is one of the very rare natural areas of Naples and its province and covers a surface of 247 hectares that includes the whole volcanic structure.

At the base of the crater are three lakes (Lago Grande, Cofaniello Piccolo and Cofaniello Grande 10 meters above sea level) whose origin can be traced back to the early activity of the crater. The largest of the three is Lago Grande (Big Lake) with a surface of 3.3 hectares. It is still fed by underground water. Cofianello piccolo and Cofianello grande, both the size of a pond, are fed by rainfall.

Flora

The whole area is an environmental mosaic of considerable complexity and the composition of the vegetation is the result of inverted plant zonation. This particular type of plant zonation, whereby high altitude species are found at lower altitudes and low altitude species grow at higher altitudes, is the result of the particular micro-climatic conditions of the crater (generated by the presence of the three small lakes and the crater itself). In this type of zonation the holm oak forest and the Mediterranean maquis (composed by tree heath, mirt, mastic, privet) grow on the crater borders while the mesophile species typical of higher altitude like the sweet chestnut (Castanea sativa), sessile oak (Quercus petraea), pedunculate oak (Quercus robur), field elm (Ulmus minor) and hornbeams are at the bottom of the crater a few meters above sea level.
Along the lake shores the vegetation comprises *Juncus*, *Cyperaceae*, *Typha latifolia*, common reeds and goat willows. At the centre of Lago Grande there is a wide bed of reeds and willows and a large carpet of European water lilies that in spring and summer covers most of the lake. Lago Piccolo is, instead, completely covered by common duckweed (*Lemma minor*).

Trail borders and trees are coloured by a rich undergrowth composed by butcher's broom (*Ruscus aculeatus*), cuckoo pint (*Arum italicum*), hawthorn (*Crataegus monogyna*) and by the flashy and rich blossoming of the ivy-leaved cyclamen (*Cyclamen napolitanum*), bettercup (*Ranunculus millefoliatus*) and many wild orchid species.

At greater altitudes the mesophile wood gives way to the Mediterranean vegetation dominated by the holm oak forest (*Quercus ilex*). Strawberry trees (*Arbutus unedo*) and manna ash (*Fraxinus ornus*) can be found in the less exposed areas of the nature reserve while Mediterranean maquis grows in the sunny areas.

**Fauna**

The remarkable biodiversity of the Reserve favoured the establishment of a very diverse animal community. Birds are the most interesting wildlife presence: there are approximately 130 different species that come to rest and/or nest during migration and the winter season.

Many of these species are protected both nationally and internationally. Most are in fact included in the Italian Redlist of Birds (a list of threatened or endangered species of birds in Italy) and/or the European directives (Birds Directive for the conservation of wild birds). Species protected by EU legislation are known as SPEC (Species of European Conservation Concern).

The mesophile wood houses many songbirds like the Blackcap (*Sylvia atricapilla*), the European Robin (*Erithacus rubecula*), the Chiffchaff (*Phylloscopus collybita*), the Common Blackbird (*Turdus merula*), Chaffinch (*Fringilla coelebs*), the Winter Wren (*Troglodytes troglodytes*), the Common Firecrest (*Regulus ignicapillus*), the Blue Tit (*Cyanistes caeruleus*), the Great Tit (*Parus major*), the Coal Tit (*Periparus ater*), and three species of woodpeckers the most common of which is the Great Spotted Woodpecker (*Dendrocopos major*) symbol of the nature reserve.

Following a re-introduction programme in 1998, it is today possible to find the Ferruginous Duck (*Aythya nyroca*), one of Europe’s rarest duck species. The species has, today, a stable population and nests along the shores of Lago Grande degli Astroni.

Birds of prey dominate the Cratere degli Astroni bird population. There are four diurnal birds of prey species that nest in the crater: the Peregrine Falcon (*Falco peregrinus*), the Common Kestrel (*Falco tinnunculus*), the Common Buzzard (*Buteo buteo*) and the Eurasian Sparrowhawk (*Accipiter nisus*). Nocturnal nesting species comprise the Little Owl (*Athene noctua*), the Tawny Owl (*Strix aluco*) and the Barn Owl (*Tyto alba*).

The amphibian population includes the Edible Frog (*Rana esculenta complex*), the Agile Frog (*Rana dalmatina*) and the European green Toad (*Bufo viridis*). There are also five snake species: the Green Whip Snake (*Coluber viridiflavus*), the Four-lined Snake (*Elaphe quatuorlineata*), the Aesculapian Snake (*Elaphe longissima*), the Grass Snake (*Natrix natrix*) and only in the higher and most sunny part of the reserve the viper (*Vipera aspis*).

The mammal population is remarkably affected by the reserve’s limited extension and by the strong development of urban settlements in the surrounding areas. The nature reserve is populated by the Red Fox
Visiting the Nature Reserve

Cratere degli Astroni nature reserve offers an ample choice of nature trails, each concentrating on a particular theme (historical, geological, botanical, zoological etc). Although each path is unique they are all connected and dependent on each other. Due to their nature trails may at certain times of the year be off limits to visitors (eg, for research, safety reasons etc). For this reason visitors are advised to contact the visitor centre before arrival.

Trail 1: Wetland Areas of the Nature Reserve

The wetland trail is a short and easy path leading to the base of the crater. The three water bodies which can be found at the base of the crater are at short distances from each other. Although their origins differ they offer the visitor the chance to observe three different wetland habitats with their own environmental characteristics.

Coffianello Piccolo is a wild marshland dominated by an extensive cover of common duckweed. Amphibians, aquatic birds and insects can all be found here. Coffianello Grande, has, instead, almost completely dried out.

Lago Grande is a lake of approximately 3 ha offering a spectacular view. A wet woodland, reed bed and great extensions of European white water lilies characterise the lake and its surrounding. Here a wide variety of bird species, including aquatic birds and raptors, as well as reptiles and damselflies can be seen.

Trail 2: Life in the Woodland

The nature path leading into the woodland is a simple trail of high environmental value. After just a few steps visitors encounter a number of pine trees bearing the tapping marks of the intense activity of the Great Spotted Woodpecker, symbol of the Oasis.

Further down the trail the visitor comes face to face with what is the principal attraction of the nature reserve: a 350 year old pedunculate oak tree known as Gennarino. It escaped the uncontrolled felling of the 1990’s. To “hug” the tree requires the arms of 10 children!

Trail 3: Viewpoints

If you enjoy long and sunny walks with breathtaking views then this trail may be worth the effort. It is 6 km long (there is a 100 m elevation gradient along the trail) and takes the visitor around the inner perimeter of the nature reserve along the ancient Bourbon walls. The trail can be reached from the Tower at the main entrance. Although it takes some effort the stunning views which can be admired from the viewpoints are well worth it. Once at the top the view over the crater is extraordinary. Visitors can admire the thick
woodland covering the base of the crater which then slowly gives way to the Mediterranean maquis and evergreen oak woodland along the crater walls. Even more breathtaking is the view over the lake!

**Trail 4: Geology of the Nature Reserve**

Cratere degli Astroni is one of the only two craters (along with Monte Nuovo) craters of the Phlegrean fields to be well preserved. For this reason this trail has much to offer. Having reached the only lava wall to be found in the crater, the trail then continues towards *Colle dell’ Imperatrice*, a small hill of approximately 70 meters. Colle Imperatrice represents the highest peak within the crater. Continuing along the trail the visitor reaches Rotondella, another hill within the Astroni crater. The trail then brings the visitor to the *Vaccheria*, once the hunting deposit of the Bourbon family and today used by the many nocturnal raptors (Little Owls, Barn Owls and Tawny Owls) and elusive mammals (Red Fox and Least Weasel) of the Oasis.

**Trail 5: Birdwatching**

Cratere degli Astroni represents one of the richest places of the Province of Naples for its bird diversity. More than 130 species have been observed in a year! A walk along the trails of the reserve in search of the beautiful birds is thus well worth the time! The Peregrine Falcon can easily be spotted near the lava wall where it has been regularly nesting for years. From here the trail leading into the woodland can be a pleasing experience for the many bird songs which can be heard (including the many tits, blackcaps and noisy blue jay).

Towards Lago Grande many beautiful aquatic birds can be seen! It is impossible to remain indifferent to the spectacular observation of many birds on the lake including Mallard Ducks, American Coots, Kingfishers, Little Bitterns, Little Grebes and Common Moorhens. ..!

**Directions**

By car: Naples ring road, exit at Agnano and keep on the right for 2 km.

By bus: C14 line from Cumana Stazione Pianura or from Bagnoli (Piazza Salvemini).

**Contact Information and Opening Times**

Excluding January 1st, Easter Monday and December 25th the nature reserve is open all year long as follows:

- **Groups and school groups:** guided visits every day on booking. Duration approximately 2.30 hours.
- **General Public:** from Fridays to Sundays opening time at 9.30 am, closing time varies according to season.

For information and booking call: +39 081.5883720, fax +39 081.5881255
E-mail: oasiastroni@wwf.it

The nature reserve will remain closed in case of adverse weather.

**Places to visit**
The Phlegraean field regional park;
The Solfatara, an active volcano crater;
The Monte Nuovo;
The Agnano Baths;
The Cuma Acropolis

**Overnight stays and restaurants**

We suggest visitors take advantage of the numerous opportunities offered by Naples and Pozzuoli.