

Nahal Me'arot Nature Reserve

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Nahal Me'arot Nature Reserve World Heritage Site

The prehistoric site in the Nahal Me'arot Nature Reserve was inscribed by UNESCO in 2012 as a "World Heritage Site with outstanding universal value for the study of human evolution." The inscription would not have transpired without the years of work on the necessary documentation undertaken by the Hof HaCarmel Regional Council, the Institute of Archaeology of the University of Haifa, the Israel Nature and Parks Authority and the Israel National Commission for UNESCO. Ninety years of archaeological research in the site's four caves (Tabun, Jamal, el-Wad and Skhul) have revealed rare cultural continuity representing some 500,000 years of human development and changes in climate and the environment, along with testimony to significant cultural transformations. Nahal Me'arot is the only site in the world where remains have been found both of Neanderthals and modern humans in the Middle Paleolithic period (250,000–50,000 years before the present). The remains of architecture, numerous burials and a variety of tools and artistic items, which are some 10,000–15,000 years old and were uncovered in the Natufian village of el-Wad Cave, constitute evidence of the transformation from a hunter-gatherer culture to permanent settlement and agriculture. The caves are a key site worldwide for the study of human cultural and biological evolution in the context of ecological changes; for research in biodiversity, the history of settlement in the region and the use of caves in historical periods; and for interdisciplinary archaeological and anthropological research. UNESCO inscribes a site on the World Heritage List if that site meets at least one of the criteria of the World Heritage Convention. Nahal Me'arot was inscribed after having met the following criteria:
Criterion 3: It bears unique or at least exceptional testimony to a cultural tradition or to a civilization that is living or has disappeared.
Criterion 5: It is an outstanding example of a traditional human settlement, land-use, or sea-use that is representative of a culture (or cultures), or human interaction with the environment, especially when it has become vulnerable under the impact of irreversible change.

List of World Heritage Sites in Israel

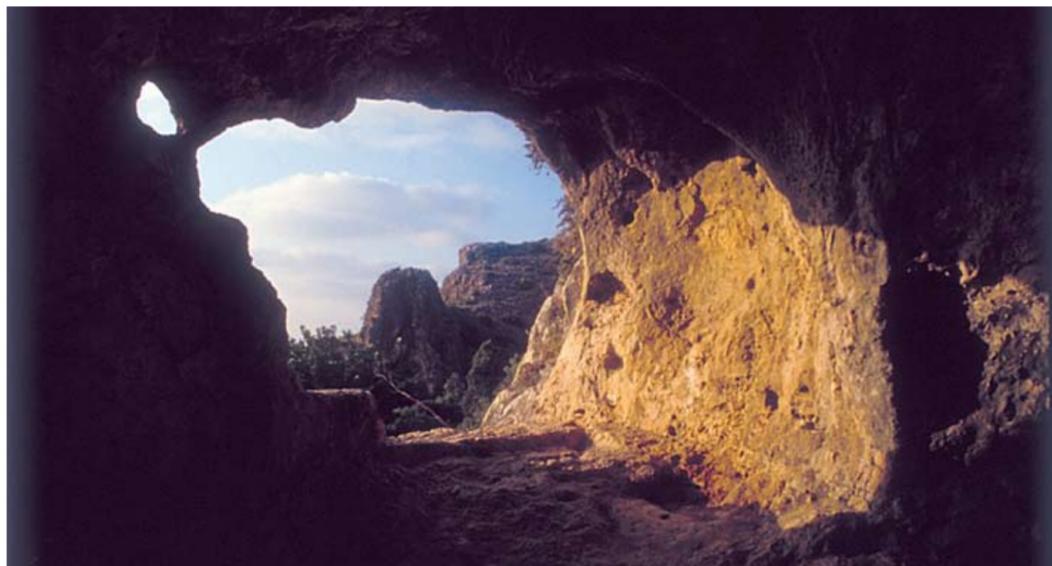
- 1981 – Jerusalem – the Old City and its Walls (submitted by Jordan)
- 2001 – Masada
- 2001 – Old City of Acre
- 2003 – White City of Tel Aviv – the Modern Movement
- 2005 – Biblical Tels – Megiddo, Hazor and Beer Sheva
- 2005 – Incense Route – Desert Cities in the Negev – Halutsa, Mamshit, Shivta and Avdat
- 2008 – Baha'i Holy Places in Haifa an
- 2012 – Sites of Human Evolution on Mount Carmel: the Nahal Me'arot/Wadi el-Mughara Caves

Welcome to the Nahal Me'arot Nature Reserve World Heritage Site

The Nahal Me'arot Nature Reserve extends for more than two kilometers on both sides of Wadi Me'arot on Mount Carmel. The wadi begins near the Druze village of Dalyat al-Karmil and makes its way west to the Mediterranean Sea south of Kibbutz Neveh Yam. Well-developed Mediterranean woodlands are preserved on the slopes of the wadi, which is a habitat for many animals.

The reserve has a number of special characteristics:

1. It is home to a group of prehistoric caves in which humans lived for some 500,000 years. Such long-term habitation of the same caves is very rare anywhere in the world. It is thanks to this phenomenon that UNESCO inscribed the reserve a World Heritage Site in 2012.



El-Wad Cave, looking inward

2. It encompasses a cliff, the remnant of an ancient reef that in the geological past rose above today's sea level and consists of the remains of fossilized marine creatures.
3. The reserve is home to Mediterranean woodland vegetation typical of the Carmel, including Kermes oak (*Quercus calliprinos*), carob (*Ceratonia siliqua*) and lentisk (*Pistacia lentiscus*) trees alongside Jerusalem spurge (*Euphorbia hierosolymitana*) and *Brassica cretica* shrubs (this reserve is Israel's only habitat for the latter).
4. The cliffs are a habitat for hyrax and nesting raptors, including common kestrel (*Falco tinnunculus*), barn owl (*Tyto alba*), long-legged buzzard (*Buteo rufinus*) and Eurasian eagle-owl (*Bubo bubo*).

The Tour of the Reserve

Tabun Cave

The tour of the reserve begins at the Tabun Cave, which must be reached via a steep, stepped trail. At the top of the trail, in front of the cave entrance, is a broad lookout plaza. To the north rises Etsba Cliff – part of the core of the fossilized reef. The cliffs were exposed on the Carmel facing the sea after the waves of the primordial Thetis Sea, which once flooded large

Dear Visitors

We wish you an enjoyable visit in the reserve. Please follow the rules below to ensure a pleasant visit for you and those who come after you.

- A picnic area is located at the entrance to the reserve for your convenience. Eating is allowed only there. Do not bring food into the reserve.
- The caves, remnants of prehistoric humans, animals and plants are part of the reserve – leave nothing behind and remove nothing from them.
- Walking trails have been created for you. Do not deviate from them.
- Keep the area clean. Discard trash in designated receptacles.
- Do not bring pets into the reserve, including dogs.
- Do not light fires and do not smoke in the reserve.
- Be careful not to slip on or after rainy days.
- Visitors are allowed in the reserve only during opening hours.
- Groups must coordinate their visit in advance.
- Guided tours of the Carmel and its surroundings may be reserved by contacting the education center.
- Our rangers will be happy to assist you and answer your questions.

Visiting hours:

Sunday–Thursday, Saturday and holidays: 8:00–16:00

Fridays and holiday eves: 8:00–15:00

During Daylight Saving Time, the site closes one hour later.

Entry to the reserve is allowed until one hour before closing time.

Reserve and education center phone: 04-9841750/2

Fax: 04-9843144

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Nahal Me'arot cliff, 1929 – before the excavations
(courtesy of the Israel Antiquities Authority)



Rudist

portions of the Eastern Mediterranean, reached the base of the range, beat against it and caused the lower portions to collapse.

The Nahal Me'arot reef was created about 100 million years ago (during the Albian-Lower Cenomanian period). The reef consists mainly of fossils known as rudists (shells from the era of the Thetis Sea).

After taking in the view, take a good look at the adjacent Tabun Cave behind the lookout plaza. This is the westernmost of the caves along the wadi inhabited by prehistoric humans.

The prehistoric caves on Mount Carmel were first excavated in the late 1920s by a British expedition headed by Dorothy Garrod. In the late 1960s, the Tabun Cave was excavated by an archaeological expedition from the United States and since then, by archaeologists from the University of Haifa.

Continuous archaeological strata some 25 m thick are preserved in the cave. These strata contain remains attesting to the existence of prehistoric humans there for about half a million years. Scholars have identified three different cultures – the Acheulian, the Acheulo-Yabrudian and the Mousterian.

The Acheulean culture (named after Saint-Acheul, in France, where the culture was first identified)

The Acheulean culture belongs to the Lower Paleolithic period. It began on the Carmel some 500,000 years ago and continued until about 400,000 years ago. The humans who inhabited the cave at that time were apparently *Homo erectus*, a name meaning "upright man." They lived in small groups and subsisted on hunting and gathering. Their main tool was the hand stone – a stone worked on both sides and used for hunting, scraping skins, chopping and digging.



Brassica cretica – A perennial plant with a woody base, which grows in the cliffs and is an ancestor of domesticated cabbage. *Brassica cretica* was discovered in the 1970s by Hava Lahav, near the Skhul Cave in Nahal Me'arot. This is the only place in Israel where this plant grows, and only a few dozen have been identified there. It blooms from late February to April.

The layers of fill in the cave contain quartz sand originating on the coast, which shows that the sea was higher than it is today and the shoreline was closer to the cave. The higher sea level came about when the polar ice caps melted due to global warming and the resulting water flowed into seas and oceans all over the globe.

The Acheulo-Yabrudian culture (named after Yabrud, Syria where this culture was first identified)

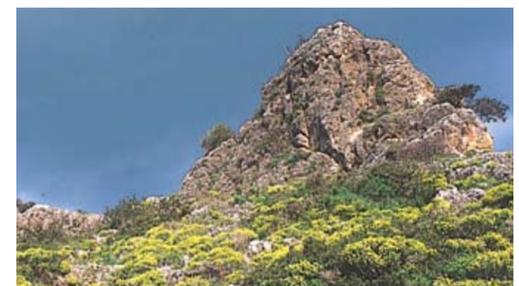
The Acheulo-Yabrudian culture existed for some 150,000 years after the Acheulean culture. Its typical tool was the scraper, worked from a thick flake. The layers of fill in the cave from this period also contain quartz sand. Findings in the cave show that its inhabitants hunted and consumed deer.

The Mousterian culture (named after Le Moustier, France, where this culture was first identified)

The Mousterian culture belongs to the Middle Paleolithic period, which began about 250,000 years ago and existed for some 200,000 years. At that time humans manufactured stone tools such as points and scrapers using the methodical Levallois technique, revealing progress in their ability to plan and execute. The cave served as a base for some 25–50 individuals, who hunted animals common in the area at that time, mainly fallow deer and gazelles. The bones of a hippopotamus and extinct species of camel and rhinoceros that once roamed the country were also found in the cave.

Toward the end of the Mousterian culture, part of the cave's ceiling collapsed, forming a chimney-like space. The findings indicate that this space may have been used as a deer trap.

The most surprising discovery of the Mousterian culture on Mount Carmel was that two physically different hominoid groups, existed here simultaneously. In the Kabara Caves (near Zikhron Ya'akov) and in the Tabun Cave, a few skeletons were found that belong to Neanderthals, while in the Skhul (Gdi) Cave, the easternmost on the cliff, skeletons of modern humans (*homo sapiens*) were found.



Etsba Cliff

At that time the Carmel caves were the northernmost site in the world reached by early homo sapiens (who evolved from homo erectus in Africa), and the southernmost place in the world reached by Neanderthals (who evolved from homo erectus in Euro-Asia). The nature of the interaction between these two types of hominids is one of the most intriguing questions in prehistoric research worldwide.

Jamal (Gamal, Camel) Cave

After a long journey through the “time tunnel” of the Tabun Cave, the trail continues to the foot of the tall cliff, to the Jamal Cave. Typical rock plants grow out of the stone wall here, such as *Dianthus pendulus*, common pennywort (*Umbilicus intermedius*), golden drop (*Podonosma orientalis*) and the rare *Brassica cretica*. These rock plants have adapted to life in small pockets of soil and fissures in the cliffs.

The bell-shaped Jamal Cave, like most of the caves in the Carmel, was created by rainwater seeping into the ground and dissolving the limestone until large spaces sometimes form that are exposed as caves. These are known as karstic caves, named after the region in Yugoslavia where they are very common. The Jamal Cave contains a display that illustrates the daily life of prehistoric humans of the Mousterian culture. Excavation here yielded mainly Acheulo-Yabrudian flint tools, similar to those found in the Tabun Cave.

El-Wad Cave

The trail continues to the El-Wad Cave, the longest of the Carmel caves – 90 m. This cave contains a spacious entry hall at the end of which is a long, narrow corridor. A broad rock terrace fronts the cave.

Settlement in this cave began in the period of the Mousterian culture, but the main finds belong to the Aurignacian culture (named after the site in France where it was first discovered), which came into existence about 40,000 years ago and continued for some 20,000 years. No human bones were found from this period in the Carmel; however, the stone tools that were found are more sophisticated than before and, for the first time, bone tools were found. Another technological innovation was the use of a chisel made of horn to make tools.

After the period of the Aurignacian culture, continuity of settlement in the cave was interrupted for some 8,000 years.

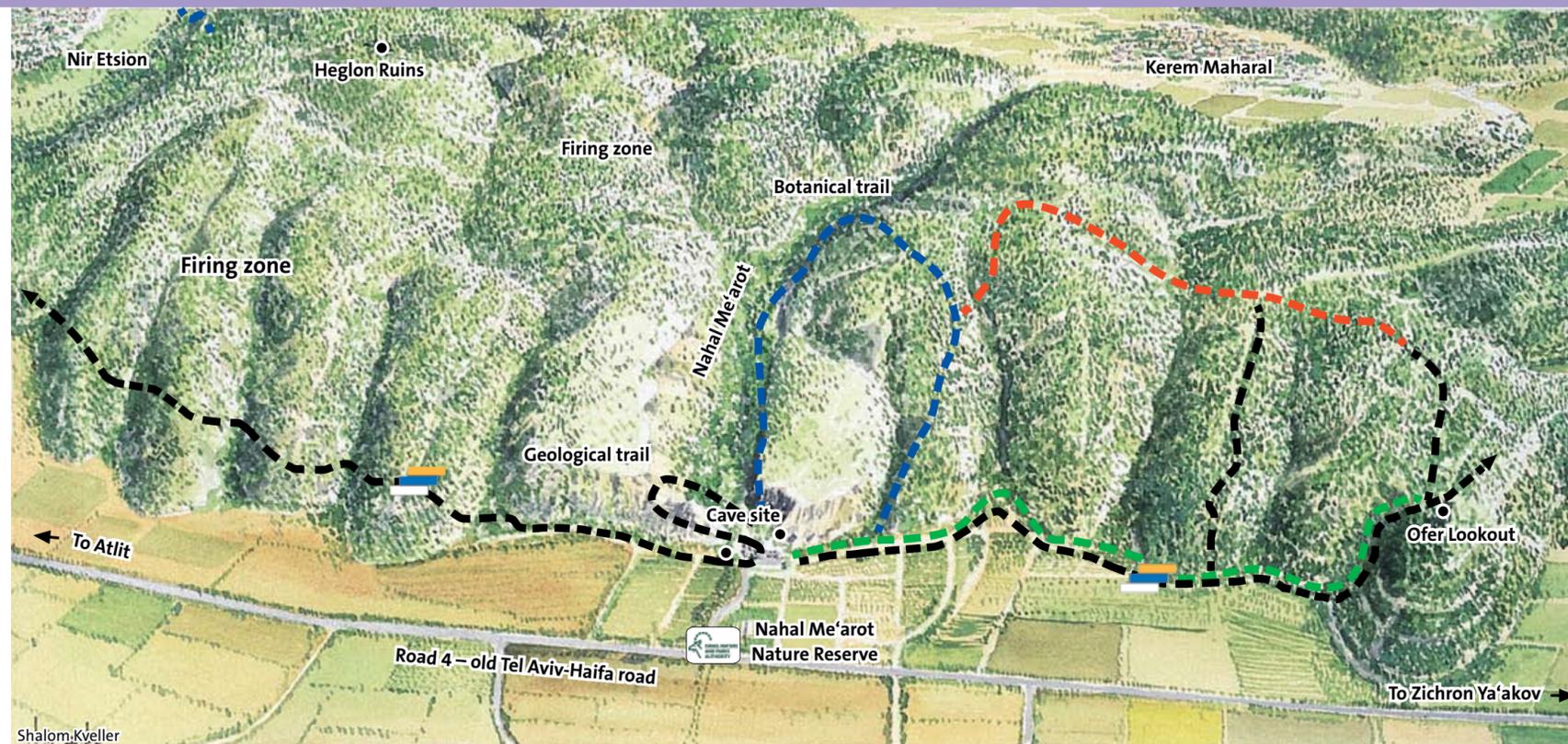
Signs of human activity appeared again in the period of the Natufian culture (named after Wadi Natuf in Judea, where it was first discovered), which began 15,000 years ago and continued for some 4,000 years. The center of life in the cave at that time moved from the entrance hall to the rock terrace outside the cave, where the Natufian village was established. This culture saw extensive changes in the way these prehistoric humans lived – the beginning of extensive hunting and gathering, which eventually led to the domestication of plants and animals.

Sedentary settlements were built for the first time during this period, and scholars discern foundations of stone structures. Artistic objects also appear now for the first time in this country, including the carved stone head of a male figure, an animal head carved from bone and a shell necklace.

This culture also produced real cemeteries. Near the entrance to the cave are remains of a retaining wall from this period and niches carved in stone, whose purpose is unclear. The proximity of the niches to the nearby Natufian cemetery suggests that they were associated with ritual practices. An audiovisual presentation in the el-Wad Cave showcases the daily life of prehistoric humans based on scholars’ conclusions and findings in this area.

Skhul (Gdi) Cave

Remains of modern humans (homo sapiens) about 100,000 years old (the time of the Mousterian culture) were found in this cave, as well as burials of Neanderthals from the Tabun Cave. The skeletons discovered in the Skhul Cave constitute some of the earliest evidence in the world of the presence of modern humans outside of Africa (where they evolved some 200,000 years ago). The complete jaw of a wild boar, laid on the chest of one of the deceased, has been interpreted as a burial offering. Also associated with the burial were seashells collected and made into beads and pieces of a colorful mineral (ochre), which may have been used to decorate the body. These findings, among the earliest of their kind in the world, indicate “modern” human behavior and an advanced world of symbols.



Touring Routes in the Reserve

The Geological Route

Touring time: about 1 hour

This sign-posted loop trail, marked in black, starts at the parking lot and ascends to the Etsba Cliff on the northern bank of Wadi Me'arot. There are many fossils and rock plants on the way. A spectacular view of the Carmel cliff and coast awaits at the top.

The Botanical Route

Touring time: about 2.5 hours

This trail, marked in blue, reveals different plant communities and soils of the Carmel. The trail begins in the bed of Wadi Me'arot. About 700 m along, after the pump house, the trail climbs via the southern bank of the wadi to the plateau overlooking the Carmel and the Coastal Plain.



Crown anemone

Ofer Lookout

Touring time on the loop trail: About 5 hours

This trail, marked in green, begins at the reserve parking lot and continues south to the top of the hill where a Jewish National Fund fire lookout tower stands – the Ofer Lookout. This part of the trail (touring time 1.5 hours) features natural Mediterranean woodlands – oaks, carobs and lentisks, as well as planted forests.

The lookout, where the JNF has built a rest area, reveals views of the Carmel and the Carmel coast. You can return on the green-marked trail but we recommend extending your visit and returning via the trail marked in black that leads eastward from the lookout. Along the way the trail markings change to red, and it circles around the foot of Haruv Ruins. From there, the trail, now marked in blue, leads you back to Wadi Me'arot.

The Israel Trail

The Israel Trail crosses Wadi Me'arot on the boundary between Mount Carmel and the Carmel coast. The trail is marked along the cliff line and at its base. Hikers can see the fossilized reef created by ancient wave action almost all along the western Carmel cliff, along with rock plants thriving in their soil pockets.

Nature Reserves and National Parks in the Carmel Region

Dor HaBonim Beach Nature Reserve: This portion of the beach has some of the most beautiful inlets on Israel's coast, with abrasion platforms that are home to special species of flora and fauna. Entry to this reserve is via Moshav HaBonim.

Kerem Maharal Nature Reserve:

A geological reserve with concentrations of tuff (volcanic ash), this reserve is located north of Moshav Kerem Maharal.

Karta Ruins (Dosteri) Nature Reserve:

This small reserve, on the kurkar ridge in the Wadi Oren estuary, affords a view of the Atlit Fortress and contain Crusader-era ruins, a hewn passageway and plants typical of kurkar rock. Abundant wildflowers bloom in the spring. The reserve is located opposite the reconstructed Atlit illegal immigrant camp.

Wadi Kelah-Galim Nature Reserve:

The largest nature reserve on the Carmel, this reserve includes four main sites: Hai-Bar Carmel, Wadi Oren, Wadi Sfunim and Etsba Ridge. The reserve features wadi bed landscapes with their special plant species and many more caves with prehistoric remains. At the Hai-Bar, breeding nuclei are being raised of animals that have become extinct in the wild in this country or are endangered, in the hope of reintroducing them to the wild: Persian fallow deer (*Dama dama*), roe deer (*Capreolus capreolus*), wild goats, wild sheep and vultures.

Wadi Nesher Nature Reserve:

A short, rocky wadi, noted for its moist woodland species such as laurestine (*Viburnum tinus*). The reserve includes Arba'im Woods, with its large Kermes oaks (*Quercus calliprinos*), south of the University of Haifa.

Wadi Alon Nature Reserve: This Mediterranean woodland reserve includes the rocky wadis Alon and Hek, which descend to the Alon Valley. Located southeast of Kibbutz Bet Oren, this reserve features many hiking trails.

Keren HaCarmel Nature Reserve: Many raptors nest in this forest-park reserve of Mt. Tabor oaks (*Quercus ithaburensis*). The reserve surrounds the Mukhraka Monastery on the eastern slopes of the Carmel.

Mishmar HaCarmel: This farm, also known as the Shalala Ruins, was home to Jewish settlers in the late 1930s. The Israel Nature and Parks Authority has undertaken extensive restoration work here. An easy trail encircles it, revealing panoramas of the entire Carmel, including the area of the December 2010 fire and the memorial to the victims of that fire, the worst the State of Israel has ever known.



View of the Carmel from the Ofer Lookout

Tanimim Stream Nature Reserve:

The reserve and the dam walk are suitable for the whole family. The loop trail takes in the reserve's main attractions, including the Roman dam. The trail crosses small bridges over the stream, and includes a visit to the flour mill and a walk along the stream banks. The walk takes about 1–2 hours, and is partly handicapped accessible.

The Carmel Park:

The national park and nature reserve create more than 100,000 dunams (25,000 acres) of contiguous, natural, green open space. The park features routes for visits by car and hiking trails, rest and picnic areas and scenic lookouts.



Flint tools from various prehistoric cultures



Hyrax



Jerusalem spurge (*Euphorbia hierosolymitana*)