ArtsRamon (Yetsiramon)

The workshops at ArtsRamon use natural materials to acquaint participants with the rock and sand typical of Makhtesh Ramon, with their unique qualities and rainbow of colors. Appropriate for all ages, the activities include filling test tubes with colored sand; using a mortar and pestle and special sieves to manufacture paint from clay; drawing; sculpture; and modeling in clay. ArtsRamon activities take place in the workshop near the Visitors Center or in the quarry in the makhtesh. They range from two-hour programs for regular groups to professional workshops lasting several days.
Phone: (08)658-8821; fax: (08) 658-8620.

Be'erot Campground

Situated in the heart of the beautiful hiking trails through Makhtesh Ramon, this campground blends in with the surrounding desert landscape. Be'erot Campground has restrooms, palm-frond awnings, tables and chairs, shaded areas, cooking facilities and sinks for washing dishes. This is the only campground in Makhtesh Ramon to offer these services. There is an authentic Bedouin tent for those who would like to experience how desert-dwellers live. Bedouin hospitality includes tea, coffee and special Bedouin pita bread or full meals; prior arrangements must be made for this service. There is a fee for overnight stays. Groups must make reservations for overnight stays. To get to Be'erot Campground, take route 40 to about 10 kilometers south of Mitzpe Ramon and follow the signs.

Phone: (08) 658-6713, (08) 658-8691.

Guide Services

Ramon Park's staff of guides is available to introduce visitors to some of the scientific findings about the Ramon Park area. Guides lead visitors to hidden attractions and acquaint them with the secrets of the desert.

Telefax: (08) 658-8821
e-mail: mh.ramon@npa.org.il


Gazelles

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Campgrounds in Ramon Park and the Ramon region

1. Be'erot Campground
2. JNF forest in Mitzpe Ramon (water and restrooms)
3. Campground on Mt. Ardon (open area: 1456/0078)
4. Campground where Wadi Gevanim meets the Petroleum Road (open area: 1419/0004)
5. Wadi Nekarot Campground, at the exit from Makhtesh Ramon in the direction of the Incense Route (open area: 1454/0015)
6. Wadi Nekarot Campground, near the Makhtesh Ramon-Eilat road (open area: 1393/9974)

Easy trails / selected sites

Before setting out on any trail, please verify the particulars at the Visitors Center information desk.


Ramon Horns - view from Arod lookout

Arod Lookout

Duration of drive to the lookout: about one hour.
This beautiful spot affords a view from the southwest corner of the makhtesh. The lookout can be reached from a signposted road suitable for cars. The turnoff from the Mitzpe Ramon-Mt. Harif road is to the south (left), directly opposite the turn to the Lotz Cisterns. A road which was once part of the route linking the southern coastal plain with the southern 'Arava and the Eilat Bay can be reached from the lookout. This road is suitable only for all-terrain vehicles.

Ramon Horns

The Arod Lookout, in the southern corner of the makhtesh, is where its southern and northern cliffs meet. The lookout affords a unique view of western Makhtesh Ramon. The impressive basalt hills you can see from here are called the Ramon Horns, the largest of which is Mt. Arod. Mt. Arod and the Ramon Horns – a total of seven hills – have been dedicated in memory of the seven astronauts of the space shuttle Columbia, among them Col. Ilan Ramon.

Bio-Ramon

This living desert museum at the foot of the Visitors Center has two main elements. The first is a three-acre desert garden with six habitats characteristic of the Negev highlands and Makhtesh Ramon: *hamada*, desert spring, cliff and rockfall, riverbed, loess and rock, and dune. Sixty small animals that inhabit the Negev (insects, spiders, mollusks, reptiles and rodents) are on display in the second part. At Bio-Ramon visitors have the opportunity to observe many fascinating animals that are usually not visible in the wild. Visitors can choose to see Bio-Ramon on their own or join a guided tour. Organized groups can arrange an evening visit including a slide slow. Workshops and in-service training programs are available for teachers, instructors and eleventh-graders working on special biology projects.

Phone: (08) 658-8755/4; fax: (08) 658-8754.


Fat sand rat

Key:
- Footpath
- *Dirt Road for all vehicles
- *ATV road
- 91 Road number
- Nature site
- Spring
- Attraction
- Lookout
- Archaeological site
- Parking lot
- Campground
- Organized campground
- No entrance for car

North

* road appearing on this map in gray is not signposted in the field.

The Geological Garden and the Archaeological Garden

The Geological Garden has a number of exhibits: basalt prisms, fossils and an unusual conglomerate rock formation. The structures in the Archeological Garden are replicas of ones built in the Negev long ago: a rock cover used by prehistoric people; a tumulus, a burial structure from the third century BCE; dwellings from the early and middle Bronze Ages; a four-room house from the Iron Age (Israelite period); and stone etchings representing different periods. There is no entrance fee.


Mile stone


The Sundial

Visitors Center

The INPA's Visitors Center sits on the edge of the Makhtesh Ramon cliff. The exhibits bring to life the different elements of the landscape: geology, zoology, botany and archeology. After studying the displays, visitors can enjoy a fantastic view of Makhtesh Ramon. The audiovisual program offers scientific commentary against the background of area photographs. The soundtrack is translated into English, Arabic and French. The Visitors Center also has a three-dimensional model of Makhtesh Ramon, complete with spectacular videoclips. On the new roof lookout is a unique, precise sundial and a panoramic view.

Phone: (08) 658-8691/8; (08) 658-8620.


Visitors Center

Ramon Park Complex

Sightseeing on their own, many visitors might not have an opportunity to observe the manifold natural phenomena of the Makhtesh Ramon area. The INPA, the Jewish National Fund and the Mitzpe Ramon Local Council, established the Ramon Park Complex to enable visitors to get the most out of their time in Makhtesh Ramon. At different parts of Mitzpe Ramon and the makhtesh, visitors learn about the region and what it has to offer. Near the Visitors Center is a commercial center with public restrooms, a pay phone, a restaurant, and a souvenir shop. Below is a short description of the attractions in the Ramon Park Complex.

Dear Visitors

The Israel Nature and Parks Authority wishes you an enjoyable and interesting visit to Ramon Park. There is no charge for visiting any of the sites in Makhtesh Ramon. You are cordially invited to drop by the information counter at the INPA's Visitors Center at Mitzpe Ramon to find out about current field conditions and to purchase books and maps.
The Visitors Center is open:
Sunday-Thursday and Saturday: 8:00 – 16:00.
Friday and holiday eves: 8:00 – 15:00.
In summer the center closes one hour later.
For questions and arrangements, please call (08) 658-8691/8 or fax (08) 658-8620.


Wadi Elot


A fossilized ammonite on the ammonite wall


The Prism

The Prism (The Carpentry)

Duration of the tour: about ½ hour.
Located about 800 meters west of the makhtesh road, the Prism is a unique sandstone hill on the floor of Makhtesh Ramon. The well-marked road to the Prism is suitable for all vehicles. After being "baked" in the high heat, the sandstone cooled down and crystallized into prism-like shapes. The INPA constructed a special path, so visitors can see the site without harming the rocks. There are explanatory signs for your edification.


Lotz Cisterns

Lotz Cisterns

Duration of tour: about 3 hours, and another hour's drive to the trail-head.
Many ancient cisterns from the Israelite period lines the road from Mitzpe Ramon to Mt. Harif. Footpaths lead between the cisterns. In the winter the cisterns fill with water– an amazing sight – and in the spring the area is carpeted with blos soms. Two of the most common are the sun-rose, which paints the hills pink, and the tulip, endemic to the area. For your convenience, a parking lot, restrooms, and taps with drinking water can be found near the Lotz Cisterns.

Hemet Cistern

A large channel leads to this Israelite-period open cistern, whose walls are lined with hewn stone. Located near the Mitzpe Ramon-Mt. Harif road, this is the largest cistern of its kind in the Negev. The Hemet Cistern fills up with water almost every year.


En Saharonim

En Saharonim – Saharonim Stronghold

Duration of tour: One hour. Length of trail: About ½ kilometer.
Directions: Follow the signs on the makhtesh road to Be'erot Campground. From there, drive north for about ½ kilometer on the road marked in black. Turn east (right) on the dirt road marked in red, and continue for about 3 kilometers until the En Saharonim parking lot. The Saharonim Stronghold, which was a station on the Nabatean Incense Route, sits on the hill at the side of the parking lot. Visitors are advised to climb the hill to view the stronghold. It takes only a few minutes to walk down from here to En Saharonim. In the winter, the stream flowing from En Saharonim can be hundreds of meters long, but it sometimes dries up completely in the summer. Lovely water plants grow here, and the footprints of animals who visited the spring are almost always visible in the sand. Onagers released into Makhtesh Ramon that now make their homes here are particularly fond of 'En Saharonim, and not infrequently ibex can also be seen en route to the spring.


Sculpture Garden

Camel Hill-Promenade-Visitors Center and Sculpture Garden

Duration of tour: About 2½ hours (not including a stop at the Visitors Center).
Length of trail: About 2 kilometers.
Directions: Camel Hill is on the western outskirts of Mitzpe Ramon.
Note: Hikers should leave a car at the end-point, near the Sculpture Garden (or near the Visitors Center).
Camel Hill received its name because its shape resembles that of a camel. A short, steep path leads to the summit. Observation patios were built on huge slabs of rock on top of and at the foot of Camel Hill. Small wooden bridges connect the patios to the cliff.
The hill commands magnificent views of western Makhtesh Ramon. Camel Hill once was an important landmark and meeting place for Bedouins and researchers who came to this area. The afternoon is an especially fine time to enjoy the rugged landscape while strolling along the promenade leading to the Visitors Center. A footbridge near the Visitors Center passes over the road to Eilat. After walking over the bridge, visitors hike along the edge of the cliff. Environmental sculptures add an artistic element to the beautiful view. The hike concludes in the Sculpture Garden.

Information for visitors to Ramon Park

Makhtesh Ramon is a nature reserve in the heart of the desert. For your safety and to protect nature, please follow these rules during your visit.

- You must have a trail map in order to navigate the trails. Do not under any circumstances enter the area without such a map.
- The Negev is a hot, dry desert in which water sources are rare. Before you set out, make sure you have enough water, as well as walking shoes and a hat.
- During the summer, avoid long hiking trips at midday. There are many short, enjoyable trips you can take.
- Winters are very cold in Mitspe Ramon. Make sure you are warmly dressed.
- Stay out of the areas prone to flooding. If you are in doubt, ask at the Ramon Visitor Center.
- Makhtesh Ramon is an almost completely unspoiled area. Please protect this landscape. Do not harm flora, fauna or inanimate objects, and do not remove fossils.
- Bicycles and motor vehicles are allowed on marked roads only. Do not leave these roads, and park only in designated parking lots. Tire-tracks in the desert damage the landscape, flora and fauna. They change drainage patterns and their imprints stay behind for many years.
- Walk only on marked trails.
- Rappelling is allowed only at the authorized site near the Visitor Center.
- Fires and overnight camping are permitted only at authorized overnight campgrounds. The campgrounds are marked on hiking and trail maps. Do not sleep outside these campgrounds so as not to disturb the activities of nocturnal desert animals.
- Do not collect wood from bushes, trees or any dry vegetation to burn. During the summer, plants limit their activity and seem to be dry and dead. But if we do not harm them, they will revive and become green again in winter! Dried branches also have a function in the desert as food for animals and hideouts for small creatures. Bring your campfire wood from home!
- Please keep the area clean. Garbage can injure wild animals; ingesting the remains of our food might even kill them. Take your trash out with you. Do not bury or burn your trash.
- Makhtesh Ramon is open to visitors all year round. However there are military firing zones along its edges. Do not enter firing zones without consulting the army Southern Command coordination center. Details at the Visitors Center information desk.
- Do not touch suspicious objects.
- We strongly recommend not leaving valuables in your car when you leave it to hike the trails. Lock remaining valuables in the trunk.
- Before you enter the area, you should obtain up-to-date information regarding the status of roads and trails at the Visitor Center information counter. Before heading out on longer trips, you should leave the details of your planned route with a reliable friend at home.

Makhtesh Ramon

The largest makhtesh in the Negev, Makhtesh Ramon is at the center of two large nature reserves, Har Hanegev and Matsuk HaTsinim. Makhtesh Ramon is 40 kilometers long and nine kilometers across at its widest point. Mt. Ramon, the highest peak in the Negev (1,037 meters above sea level), towers over the southwestern corner of the makhtesh. Makhtesh Ramon is cut into the Ramon Ridge, a large anticline. Similar to the other ridges in the northern Negev, the 80-kilometer-long Ramon Ridge runs from southwest (the area of Wadi Lotz on the Egyptian border) to northeast (the 'Arava).

The Ramon anticline is asymmetrical: The slope of the strata is gentle (about 10 degrees) in the northeast and very steep in the southwest, where the layers sometimes appear vertical. At some points the steep slope has table mountains, which temper the angle of the anticline and form wide, flat steps.

The Ramon Ridge is part of the national watershed. More than 90 percent of the area of the ridge drains in the direction of the Dead Sea and the 'Arava; the remaining area drains into the Mediterranean.

Makhtesh Ramon boasts unusual natural phenomena and fascinating remnants of the past. Especially noticeable are geological finds rarely seen elsewhere in Israel: volcanic and magmatic phenomena, fossils, and ancient rock formations, created 220 million years ago! Part of the makhtesh floor consists of beautiful multicolored sandstone. Because of differences in altitude, the climate on the makhtesh floor is completely different from that on the nearby ridges.

The Negev highlands are an interesting place to observe animals and plants from that region (Irano-Turanian climate, cold in the winter) as well as typical representatives of the desert world (hot, dry weather). Almost all of Makhtesh Ramon is designated for nature conservation. Unlike most of the Negev, no military training takes place here. Thanks to the hiking trails and unpaved roads running across the makhtesh, all parts of the reserve are easily accessible. Signs direct visitors to the important sites and explain the attractions. The only settled area near the makhtesh is the town of Mitzpe Ramon, which has become a center for desert tourism.

A variety of accommodations, attractions and tourist services are available in Mitzpe Ramon.

The road from Mitzpe Ramon to Eilat is the primary access route to places of interest in Makhtesh Ramon.


Griffon vultures


Sun-rose

Flora

Of all of Israel's desert regions, the Ramon area has the most varied and luxuriant flora. This can be attributed to the variety of habitats found here and the difference between the climatic conditions on the Ramon Ridge and those on the makhtesh floor. The "Continental" climate in the high regions of the Ramon Ridge, such as Mitzpe Ramon and the Lotz Cisterns, is marked by cold and sometimes even snowy winters and warm and very dry summers. Annual rainfall averages 100 millimeters.

Many different types of plants grow on the Ramon Ridge, with those of Irano-Turanian (central Asian) origin predominating. The bitter winter cold delays the main flowering season to late winter and spring, when the flowers bloom with amazing beauty. The makhtesh floor is drier and hotter than the ridge. Saharo-Indian flora (originating in the Sahara Desert and the deserts of the Arabian Peninsula) are most commonly seen here.

The world of flora in the Ramon region can be broken down into its main characteristic habitats. The large wadis in the high Negev highlands and the rocky canyons of Wadi Elot and Wadi Lotz are home to many deciduous Atlantic pistachio trees. These trees, which grow up to 10 meters high, can be identified by the coral-shaped gallnuts on their branches. In Wadi Elot the trees form a "Continental forest" with 30 trees per square kilometer. The wadis have a wealth of flora, including buckthorn, globe daisy, and woundwort. In the spring visitors can see lovely flowers in bloom, such as tulip, Jacob's rod, and anemone.

About 10 percent of the rocky surface of the Ramon Ridge is covered by bushes and shrubs. Wormwood, a grayish, highly fragrant shrub, can be seen almost everywhere. Bedouin folk medicine uses wormwoods to relieve stomach-aches and congestion. Marjoram, a short, fragrant shrub, is endemic to the Ramon Ridge, and grows between the rocks.

The steep cliff facing the makhtesh is a vertical habitat, and therefore does not benefit from runoff water. Not surprisingly, typical desert plants, such as *zygophyllum* and *gymnocarpus*, are found here. Nonetheless, some characteristic Mediterranean flora, for example caper, sprout in the crevices. Desert shrubs, including *gymnocarpus* and *anabasis*, are the flora most commonly seen on the basalt stone, as well as on the limestone and sandstone in the makhtesh. The *gymnocarpus* sheds its leaves to conserve water during the hot weather; like other chenopods, the *anabasis* can regulate its water use by drying out its green bark.

The wadis in the makhtesh, and especially the large wadi of Wadi Ramon, are a unique habitat. Since a great deal of water drains into the wadis, acacia trees can live there. Box thorn, *ochradenus*, broom, *moricandia*, cattail, and reed grow near the acacias. Saltwort, a plant with small, scaly leaves, is found where the ground is rich in gypsum. The desert springs also produce a special habitat. Cattails and reeds grow tall near the fresh water. The rush, whose leaves have needle-like points, is evidence that there is groundwater close by, even if none is visible. Farther from the water, especially in places where the ground is rather salty, visitors can spot *nitraria*, a plant with fleshy leaves, a grayish cast, and sweetish red fruit. Spiky camel-thorns and tamarisk trees grow near the *nitraria*. The small salt crystals dotting their leaves illustrate that they are equipped to actively rid themselves of the excess salt in the ground.

Fauna

The variety of habitats in the Ramon region allows animals of many species to make their homes here. While large mammals require wide-open spaces, small animals are generally restricted to a certain habitat. The geography of the Ramon region exerts a strong influence on the fauna that inhabit this area. These animals come from all over the globe, from regions with completely different climates. On occasion, the geographic isolation from the original population led to the creation of new subspecies. Thanks to the size and remoteness of Makhtesh Ramon, coupled with the long-standing, stringent nature-conservation campaign in the Ramon region, the INPA decided this would be an appropriate place for the reintroduction of an animal which had disappeared from our country: the **onager**. In 1983, for the first time, 14 onagers were released from the herd in Hai Bar Yotvata. Although the onager looks like an ass, it is actually the smallest species of wild horse. Members of this species cannot be domesticated. In ancient times, the meat of young onagers was considered a delicacy, especially among the Romans, and this is perhaps why the local subspecies became extinct. The onager population acclimatized well to Makhtesh Ramon and by 1999 had grown to some 40 individuals. There are now approximately 100 onagers roaming the Negev. The onager was the first large animal to be reintroduced to Israel's wilderness. Following its successful reintroduction into Makhtesh Ramon, some 20 **Arabian oryx** were released into the 'Arava.

Another animal living on the cliffs of Makhtesh Ramon is the **Nubian ibex**. This animal was in danger of becoming extinct in Israel, and was saved by the 1964 Wild Animals Protection Law. Its muscular body and special leg structure enable it to the negotiate the steep rocky cliffs. It is difficult to spot Nubian ibexes when they are moving from cliff to cliff, but quite easy when they stop for a drink of water. A short survey of some of the animals found in the Ramon region follows. Since few visitors are lucky enough to catch a glimpse of the small animals living in the makhtesh, these animals are on display at Bio-Ramon in Mitzpe Ramon.

Animals from the savannahs of East Africa:

Leopard – The Negev highlands is one of the only places in Israel with a small yet vital population of this nocturnal feline.

Striped hyena – The striped hyena is a large canine scavenger.

Caracal – Recognizable by the large tufts of hair at the tips of its ears, the caracal is a large nocturnal feline.

Syrian hyrax – A small, brown-furred diurnal mammal, the Syrian hyrax lives in large groups between the rocks.

Lappet-faced vulture – This predatory subspecies is endemic to the Ramon region. The population of lappet-faced vultures was wiped out in the Negev, but perhaps can be revived, thanks to specimens which survived on the Arabian Peninsula.

Atractaspis engaddensis – This relatively thin, poisonous snake grows up to 80 centimeters long. The species is endemic to Israel and the Sinai Desert.

Poekilocerus bufonius – Black with yellow dots, this grasshopper eats poisonous plants from the milkweed family, from which it produces its venom.

From the Arabian deserts:

Dorcas gazelle - The dorcas gazelle, or mountain gazelle, is smaller than the *Gazella gazella* found elsewhere in Israel. This population was endangered in the 1960s, but was saved thanks to the Wild Animals Protection Law.

Sand fox – The diet of this small nocturnal fox is varied: bugs, small rodents, fruits, and vegetables.

Fat desert rat – The saltbush is the mainstay of the diet of this large diurnal rodent. If fed sugar-rich food, the fat desert rat will develop diabetes.

Uromastyx aegyptius – This herbivorous, diurnal agama can grow to be up to 75 centimeters long.

Cairo spiny mouse – The body of this mouse-sized diurnal rodent is covered with sharp bristles.

Sand partridge – A characteristic desert bird, the sand partridge nests on the ground. Because of its heavy body, the sand partridge cannot fly far, and skirts danger by flying from one bank of the wadi to the other.

Lesser bustard – This large terrestrial bird lives primarily in open areas. The lesser bustard was hunted in the past because its meat was considered a delicacy. It still appears on the list of endangered species.

Animals from the Mediterranean region:

Red fox – Larger than the sand fox and Afghan fox, this diurnal animal is seen all over Israel. Its varied diet includes meat, insects and plants.

Wolf – The wolves living in the Negev highlands are smaller than those found in northern Israel. The average male member of this predatory species weighs 20 kilograms.

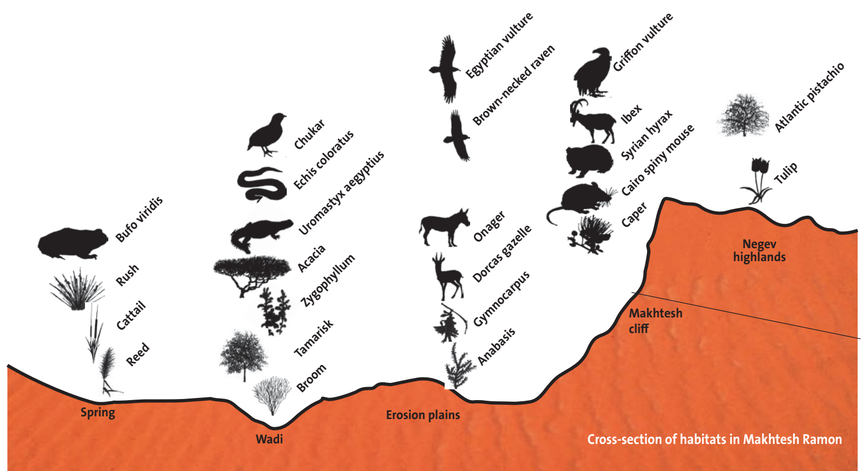
Griffon vulture – Griffon vultures nest on high, isolated cliffs overlooking the makhtesh.

Those endemic to the heights of Central Asia:

Afghan fox – This small nocturnal fox lives in areas with rocks and cliffs. It can recognized by its unusually wide tail.

Garden dormouse – A nocturnal rodent, the gray garden dormouse can be identified by its two-thirds-black tail. It preys upon invertebrates and even small mammals.

Coronetted sandgrouse – Although this diurnal bird has adapted to life in the desert, the coronetted sandgrouse must have water to drink. To quench the thirst of the fledglings, the adult males wet their neck feathers and thus fly water to their nests.




Onager

Remnants of the Past

Human beings "discovered" the Negev highlands at the dawn of history. Finds from the Negev highlands provide a great deal of information about the ways in which people adapted to the environment. During some prehistoric periods, the Negev highlands had more rainfall than today, and its weather resembled that which we now see on Israel's coastal plain. Large expanses were covered by a Mediterranean scrub forest, with its typical flora and fauna. These climatic conditions attracted groups of people who lived as hunters and gatherers. Remnants of hunters' camps from over 50,000 years ago, including flint tools, were discovered near Kibbutz Sde Boker. Remains of human settlement from 20,000 years ago were found on two mountains near Makhtesh Ramon. This area was eventually deserted because of climatic changes.

In the Early and Middle Bronze Ages (fourth to third millennia BCE), people returned to the Negev. This is evidenced by the remains of oval houses, clustered like villages, discovered in and around Makhtesh Ramon. It is possible that the open shrines and large rock piles found on the Saharonim Plateau were left by these people, and contain clues to their religion and rituals. The tribe of Simeon inhabited the Negev during the settlement period (13th to 11th centuries BCE). Israelite rule of the Negev became more firmly established during the period of King David. During King Solomon's reign, a string of fortresses lined the Negev roads, marking the southern border of the Solomonic kingdom. The most impressive ruins from the Israelite period are the water-collection systems, which can be seen at the Lotz Cisterns, the Hemet Cisterns, and elsewhere.

The fall of the kingdom of Judah gave rise to a new age in the Negev, the Nabatean period. Beginning in the fourth century BCE, the Nabateans are described as traders and guides, leading caravans from southern Arabia and the Dead Sea area to the Mediterranean ports. Remains of structures indicate that the Nabateans enjoyed a highly developed culture and great wealth. One branch of the ancient Incense Route cut across Makhtesh Ramon (and is a fascinating hiking trail today). Because the ties between the Nabateans and the Romans grew stronger at the time of Pompey, historians have proposed that the Nabatean route to Gaza was paved during the first century BCE or slightly thereafter, even though the Nabateans had settled the Negev and controlled trade in perfumes and spices as early as the fourth century BCE. The milestones erected along the road are evidence of Roman influence. The many fortresses the Nabateans built in the Makhtesh Ramon area overlooked the road and provided services to overnight guests. There are remnants of a square stronghold in Hurvat Katzara and a large, well-preserved cistern at the Nekarot Stronghold. Archaeologists found the remains of the Sha'ar Ramon caravansary near 'En Saharonim.The route between Ascent Dekalim and Ascent Mahmal is in excellent condition, as are the milestones alongside it. From here, the road continued to 'Avdat, Halutza, and Gaza. After the death of the Nabatean king Aretas IV (9 BCE-40 BCE), Nabatean control over the Negev waned, except for a short period at the turn of the first century CE. There were fewer camel caravans and after the annexation of the Nabatean kingdom to the Roman Empire, the Incense Route was supplanted by other roads. The route from Petra to Gaza via Makhtesh Ramon was abandoned.

During the fourth century the Negev became an important center for Christianity. In the Byzantine period, the Negev was renowned for its churches and study centers. The tens of thousands of people who lived on the Negev highlands developed advanced desert agriculture, including methods to grow grains and fruit trees. The remains of their terraces can be found in almost every valley. There is also evidence that shepherds roamed the area.

The Arab conquest of the land during the seventh century CE effectively put an end to settlement in the Negev for many centuries. The new rulers had little interest in the area and the residents were forced to leave. The Negev was taken over by nomads, who controlled the desert until the British Mandate period. The British blazed roads and built police stations. They paved the highway from Beersheva to Eilat, the road from Beersheva to the Large Makhtesh, and the so-called Petroleum Road from Yeruham to 'Avdat and Makhtesh Ramon. The British also established water projects for the Bedouin population and registered the names of landowners. In March 1949, during the War of Independence, the Israel Defense Forces crossed the Negev highlands and Makhtesh Ramon and marched to Eilat, and thus the State of Israel gained control over the Negev.


Saharonim caravansary

Stages in the Formation of Makhtesh Ramon

(Information in this section is based on Dr. Yoav Avni's theory.)

1. In the beginning (110 million years ago) – In the beginning, the area where the Ramon Ridge now stands had rivers and lakes, which developed near a shallow sea. Sandstone rocks were deposited onto this continental environment (Lower Cretaceous formation).

2. Creation of an ancient sea (90-100 million years ago) – A shallow sea with a dense population of life forms flooded the area. Skeletons and calcium-rich animal remains were deposited onto the sea bed, on top of the sandstone, forming 500-meter-thick limestone strata. These Cenomanian and Turonian rocks cover the hard rock at the top of the Ramon anticline and other anticlines in Israel.

3. Folding (80 million years ago) – In the meantime, the rocks folded and formed an anticline along the length of the Ramon fault, an ancient underground geological fault which was "awakened" by movements in the earth's crust. The area was later flooded by a deeper sea, in which friable limestone rocks formed (Senonian formation). The strata slant at different angles on the two sides of the anticline, forming what is known as an asymmetrical anticline. This is the reason that the later rock does not lie parallel to the older layers. The conglomerate rock found on top of the limestone, at the base of the anticline, was produced under continental conditions, evidence that the peak of the anticline protruded like a continental island above the rest of the anticline, which was still under water. Because the top of the anticline was worn away, there is no conglomerate rock on the peak.

4. Rising (60-70 million years ago) – The Ramon anticline continued to rise along the line of the Ramon fault, with strata of chalk and flint (Senonian formation) and chalk with some clay and phosphates (Maastrichtian formation). Sands and conglomerates that were washed away from the top of the anticline during a constant process of erosion were deposited around the anticline. It is possible that during this period a primary makhtesh was formed to the west.

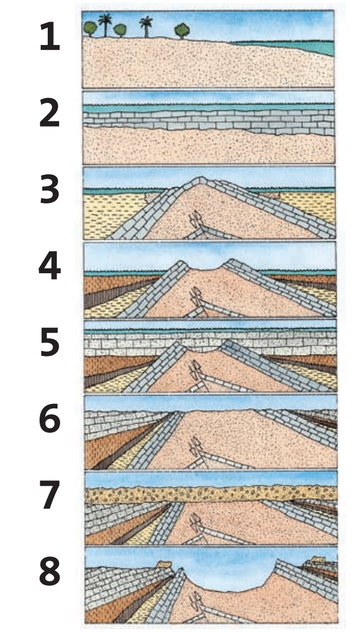
5. Additional marine flooding (40-50 million years ago) **–** During the Eocene era, the whole area flooded, including the Ramon anticline and the primary makhtesh. The limestone rocks that were deposited in this sea can be seen on the western part of the Ramon anticline and on the 'Avdat plateau.

6. Retreat of the sea and destruction of the anticline peak (30 million years ago) – The sea level dropped and the Ramon anticline continued to rise. The peak of the anticline was largely eroded, exposing a large sandstone core, which had precipitated during the early stages of the formation of the makhtesh. The sea retreated, exposing the region to continental conditions.

7. Rivers develop (10-20 million years ago) – Very large rivers, similar in size to the Nile, developed in the region. The currents carried sandstone and pebble aggregates (Neogene formation) here from the area today known as Saudi Arabia. During this period, the topographical height of the region was no more than several dozen meters above the level of the sea.

8. Undermining of the range and the creation of Makhtesh Ramon

(Makhtesh Ramon today) – The fact that today the heights of the Ramon Ridge stand more than 1,000 meters above sea level is evidence of a marked rise in the ridge. As the ridge rose, it slanted slightly to the northeast (towards the 'Arava), as the result of the development of the deep valley of the Syrian-African Rift. The great difference in height and the slanting of the ridge led to vigorous erosion and the undermining of the soft sandstone strata, which were carried from the Ramon Ridge to the 'Arava. The erosion of the inner parts of the ridge created Makhtesh Ramon as it is today.



Legend:

- Maastrichtian (chalk and clay)
- Lower Cretaceous (sandstone)
- Eocene (limestone and chalk)
- Cenomanian and Turonian (limestone)
- Neogene (sandstone and conglomerates)
- Senonian (chalk)
- Geological fault
- Senonian (chalk and flint)

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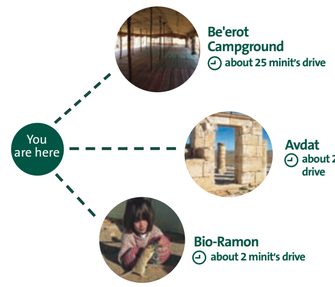

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