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# JERICHO

CIVILIZATION

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# JERICHO

ENDURANCE IN THE  
FERTILE CRESCENT

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Jericho, located in the West Bank region of the Middle East, is the oldest continuously inhabited city on the planet.



# History and environment

Jericho's 14,000-year survival is a direct result of biological and geological advantages that explain why a settlement was established there in the first place. This essay explores the idea that the history of a place is just as much about its physical environment as it is about superior technology or government. Big Historians, who are interested in the appearance and development of the first agrarian civilizations, ask probing questions: What were the geographical and biological advantages favoring certain regions that facilitated the appearance of the first towns and cities there? What role did climate play in allowing for agrarian civilizations to appear in some regions, while others remained better suited for foraging? And why is it that, while some agrarian civilizations seem to have abused their environments, and thus sowed the seeds of their own destruction, others were able to husband the advantages provided by geography and biology and successfully sustain themselves for thousands of years?

To illustrate this critical relationship between history and its environmental context, we use the city of Jericho as a case study. Jericho is the oldest city on the planet, situated today in the West Bank region of the Middle East. The location and long-term survival of the city is an excellent example of the impact of the environment on human history. The establishment of Jericho 14,000 years ago resulted from the same geographical and biological factors that led to the most significant revolution in all human history — the appearance of agriculture.

To remind ourselves just how revolutionary this transition was, let's consider the situation some 15,000 years ago. Humans had by then occupied every continent on the globe except Antarctica. Every single human, wherever they lived, survived by foraging, also known as hunting and gathering. Humans had invented a wide array of foraging techniques specifically adapted to different environments, which ranged from the deserts of Australia to the Arctic ice. But the small size of most foraging bands, and the fact that few exchanges took place between them, limited the amount of collective learning that went on.



But then something changed. Between 11,000 and 10,000 years ago, new ways of life and technologies associated with farming began to appear. Farming eventually gave humans access to more food and energy; consequently, humans began to multiply more rapidly and live in larger communities like villages, towns, and eventually cities. These processes led to an entirely new level of complexity in the human condition. The transition to agriculture was the first step in a cultural revolution that utterly transformed human societies and drove our species onto a path that led rapidly toward the astonishing complexity of the modern world. And one of the most significant steps in the early stages of that process was the emergence of large settlements like Uruk and Tenochtitlan — and Jericho.

To explore the history of Jericho, we need first to take a look at the role of climate change in encouraging humans to make this transition to farming, particularly in the Fertile Crescent. Then we need to consider the Natufian people, who were some of the first humans to adopt farming and also were the founders of the small foraging base that went on to become the city of Jericho. Next we need to ask, why there? What particular geological and biological advantages did Jericho have that not only explain why it was established where it was but also account for its longevity? We conclude with a closer look at events in Jericho, further evidence of the importance of environmental factors in the rich tapestry of human history.

## The role of climate change

As we have seen elsewhere in the course, of all the factors that help explain the transition to agriculture and the appearance of large settlements, the most critical is the climate change that occurred at the end of the last ice age. It was only with the end of the last ice age early in the Holocene epoch, some 13,000 years ago, that the first evidence of farming begins to appear in the archaeological record. Conditions were warmer and more stable; entire landscapes were transformed. Forests spread across the steppes, displacing the large animal species, such as mammoths and bison, that had grazed there. As the herds of these big animals that humans had hunted for tens of thousands of years migrated northward, communities became dependent on

smaller game like boar, deer, and rabbit, as well as on new root and seed plants.

These changes were especially notable in the Fertile Crescent, an arc of high ground that stretches north up the coast of the eastern Mediterranean, east through the mountains of Turkey and northern Iraq, and then south along the high ground between Iraq and Iran. All across the Fertile Crescent, the change in climate encouraged the spread of small game and warmth-loving cereal grasses. Abundance was particularly great in regions where there were good supplies of water, of course, and also where the local environment had produced a range of plants and animals that were good potential domesticates. These same locations attracted humans, too, and we have evidence of numerous Stone Age foraging communities that were experimenting with these plants and animals. The most important of the groups attracted to the abundance of the Fertile Crescent was the Natufians.

## Natufians and the “trap of sedentism”

From about 11,000 years ago, some groups of humans began to adopt less nomadic lifestyles, becoming at least “part-time” sedentary. There were two main reasons for this: climate change and local population pressure. With the arrival of more stable climates at the end of the last ice age, regions of natural abundance appeared where large numbers of humans were able to settle. These people were not farming, but living off the rich natural resources of the land. Those communities that abandoned nomadism but still lived as foragers are called “affluent foragers,” or wealthy hunter-gatherers, meaning those who have enough resources to settle down and stay in one place. The most important affluent foragers in the story of Jericho were the Natufian people, who began occupying the western Fertile Crescent (present-day Israel, Jordan, Lebanon, and Syria) just over 14,000 years ago.

Evidence for the Natufian culture first came to light in 1928 with discoveries made in northern Israel by Dorothy Garrod at a place called Wadi en-Natuf (hence the name Natufian — we have no idea what they called themselves). We do know that they lived in villages, harvested wild grains, and hunted gazelles. The Natufian toolkit was not really any more sophisticated than that of other foragers, but their more intense use of stone sickle blades to harvest large quantities of wild cereal grains is evidence of a serious change in food-gathering practices. The grain they harvested was also subject to much higher levels of processing than ever before. Many Natufian sites show that standard mortars and grinding stones were supplemented by much larger pipe-shaped mortars dug deep into the bedrock.

The construction of regular cemeteries also separates the Natufians from their contemporaries, because they suggest more complex communities with leaders and social hierarchies. Some individuals were buried wearing personal adornments like caps, bracelets, and garters, which look like indicators of their higher status. It's also worth noting that only a tiny minority of the population was selected for ceremonial burial, which reinforces this idea that Natufian society was more socially stratified than any earlier human community.

Evidence that the Natufian diet consisted mainly of harvested and prepared cereal grains was discovered at the important Ain Mallaha site in Syria. Skeletal remains showed that most of the residents had suffered from rotten teeth as a result of eating too much barley and wheat. Ain Mallaha also shows that affluent foraging was leading to increasing populations. Although the site's estimated year-round population of 200 to 300 people might seem tiny by today's standards, this may well have been one of the largest human communities that had ever existed up to that time. This tells us that one of the most important impacts of affluent foraging is that population pressure was forcing humans into smaller territories and denser settlements.

By 10,000 BCE, foragers had migrated to most parts of this region, and in some areas there was simply not enough room for them all to settle. With each group having to survive off smaller and smaller parcels of land, these communities found themselves caught in what Big Historian David Christian has called the "trap of sedentism." Traditional foraging is almost always nomadic, requiring near constant migration, so human communities had to keep populations small. It is impossible for migrating bands to support too many feeding infants or less mobile elderly members. Survival necessitated not only natural birth control but also killing off unwanted infants and the elderly to keep populations sustainable.

Once groups like the Natufians decided to remain in one place through the pursuit of affluent foraging, all this changed. There were no longer the same constraints on population. Older members of the community did not have to be abandoned; more children could be supported. As a result, affluent foraging groups began to increase in size, and this led to the problem of overpopulation. This is, in fact, what we find at most Natufian sites — clear evidence of population pressure. Eventually there were simply too many mouths to feed by foraging practices, which is what archaeologists have found at the site of Ain Ghazal on the outskirts of Amman, Jordan — a rapid fourfold increase in population around 9,000 years ago.

This created so much pressure that increasingly desperate and environmentally unsustainable attempts were made to increase food supplies. The result at Ain Ghazal and so many other sites was that groups were forced to leave the settlement to try to survive elsewhere. At a handful of more sustainable sites, however, agriculture did prove capable of supporting much larger populations, once the inhabitants learned to domesticate certain plant and animal species and increase their production through full-scale farming. One such site was Jericho.

## The environmental advantages of Jericho's site

The ultimate significance of this transition to farming is that eventually sedentism led to the creation of larger settlements, until towns, cities, states, and empires appeared on the surface of the Earth for the first time. But cities and states emerged only in a handful of regions that possessed enough favorable environmental factors to allow for the establishment of these large communities. Rather than thinking of the emergence of cities and states as an inevitable outcome, we need to focus on the particular natural reasons that allowed some villages to continue to grow until they became towns and cities.

There are many examples of villages that did grow especially large, although the reasons are not always clear. Some may have become important ritual centers of great spiritual significance. Others had access to a critical resource, such as a reliable water supply. Yet others became important commercial centers because they controlled the trade in valuable goods, or they occupied a strategic site on important migration routes. Jericho has proven itself remarkably sustainable because it benefited from several of these advantages, most importantly a very favorable environment.

Jericho is located in the Jordan River Valley in the West Bank. At an elevation of 864 feet below sea level, Jericho is not only the oldest city on Earth but also the lowest one. The city is well known in the Judeo-Christian tradition as the place where the Israelites returned from slavery in Egypt under the leadership of Joshua. According to the Bible, the walls of Jericho came crashing down after the Israelites unleashed the devastating sound of ram's horn trumpets, a story we will return to in a moment. But it is the natural walls surrounding Jericho that are of even greater importance in the story of this most ancient of cities.

The geological walls of Jericho were created by seismographic activity so intense that it tore a great rift in the Earth's crust extending all the way from Palestine to northeastern Africa. Of course, the engine that drives plate tectonic movements such as this, and that forces entire continents to move



Reliable water supply was a critical factor in Jericho's development

about the surface of the Earth, is the heat trapped deep inside the planet, heat that can be traced back to the processes that created the Earth and Solar System in the first place, heat that can ultimately be traced back to the energy generated in the Big Bang itself.

Jericho lies deep in this Jordan Rift Valley, a tectonic feature formed by a fault along the boundary between the African and Arabian plates. As a result of the fault that opened up between these two plates, the land dropped 3,000 feet, eventually settling almost 900 feet below sea level. At this astonishingly low elevation Natufians established the settlement that became Jericho around 14,000 years ago. But we still haven't answered the question why. What attracted these affluent foragers to this particular location? Again, it is geography and biology that provide the answer.



The Jordan River is the only major water source that flows into the Dead Sea, and Jericho is located just a couple of miles west of the river, about 10 miles north of the Dead Sea. The city is well protected by Mount Nebo to the east and the Central Mountains to the west. These geological features form natural defenses because they rise up over a mile above the city. Jericho's location in central Palestine was also ideal for the control of trade and migration routes, which pass up and down this natural valley. Throughout the city's long history these geographically strategic advantages have made it a source of envy and a coveted possession for a whole series of invaders, many of whom have seen Jericho as the key to controlling Palestine.

Despite the importance of these natural defenses and location, by far the most significant environmental advantage Jericho possessed is access to reliable supplies of water. This critical resource, essential for survival in the harsh desert environment, explains the city's ancient origin and long history. Jericho is located in an oasis and sustained by an astonishingly dependable underground water supply known as the Ain es-Sultan. This natural spring — also known as Elisha's spring, after a biblical story in the Book of Kings in which the prophet Elisha heals these waters — has apparently never dried up during 14,000 years of continuous human residency.

More than 1,000 gallons of fresh water bubble up from the source every minute. Early farmers quickly worked out a system of irrigation canals to disburse this precious resource to the surrounding farmland, which is made up of very fertile alluvial soil. It is this almost unique combination, of natural defenses, strategic location, rich soil, abundant sunshine, and, most of all, plentiful water, that has made Jericho such an attractive and sustainable place for foragers and farmers alike for so many thousands of years. When we tally up this list of environmental advantages it's hardly surprising that Jericho has enjoyed the sort of long and rich history that it has.

## The human history of Jericho

Archaeologists have discovered at least 20 successive layers of settlement at the site of Jericho. Kathleen Kenyon was the first to extensively investigate the site using modern techniques, back in the 1950s. She was searching for the Bronze Age city named in the Hebrew Bible as the "city of palm trees," but her excavations quickly revealed evidence of occupation dating back many thousands of years before the Bronze Age. Her trenches reached the remains of an early farming settlement about six acres in area, dated to circa 9600 BCE. Continued excavations revealed even earlier layers, proving that the site had been first occupied, most probably by Natufian foragers, as early as 12,000 BCE. This made Jericho the oldest continuously inhabited settlement in all human history.



A plaster sculpture excavated from Jericho, about 7000–6000 BCE



After the original foraging settlement, evidence showed that early farmers had learned to domesticate emmer wheat and barley. The availability of these two cereal grains is another significant biological advantage enjoyed by this region. Of the hundred or so domesticated plants humans depend upon today, wheat is one of the most important. It is a superb example of a species genetically pre-adapted for domestication. It can grow in a wide range of environments, and it can generate new diversity at an incredibly rapid rate, which accounts for its tremendous global success as a food crop.

Domesticated emmer wheat rapidly spread from the Fertile Crescent all across West Asia until it was replaced in the Bronze Age by free-threshing wheat. Today, our planet produces more than 620 million tons of wheat each year, providing roughly one-fifth of all the calories consumed by the 6.5 billion members of the human community.

Over the thousand years between 8350 and 7350 BCE, the village of Jericho evolved into a town that was home to perhaps 3,000 farmers. They lived in mud-brick houses arranged without any obvious evidence of town planning. Subsequent residents learned to domesticate sheep and also developed a cult of preserving human skulls and placing shells in their eye sockets.

Later farming communities were more socially complex and better coordinated than their predecessors. The residents now lived in rectangular shaped buildings made of mud bricks resting on stone foundations. In each of these buildings, a number of rooms were clustered around a central courtyard. One room was usually larger — the living room — while the rest were small and probably used for storage. Kathleen Kenyon believed that one particularly large room she excavated may have been a shrine where some type of sacred object — perhaps a pillar of volcanic rock she found nearby — was worshipped in a niche in the wall.

Archaeologists working in these later agrarian layers have discovered farming implements like sickle blades, axes, and grindstones; eating vessels including dishes and bowls made from limestone; spinning whorls and loom weights for weaving textiles; and extraordinary full-sized plaster human figures that must have been associated with some sort of religious practice.



An 18th-century engraving of the biblical Battle of Jericho

After more than 10,000 years of continuous occupation, Jericho reached its apex in the Bronze Age, between 1700 and 1550 BCE. A class of chariot-riding elites dominated and defended the city during an age of widespread intercity conflict across much of Palestine, or the “land of Canaan,” as it was then called. The defenses were based upon a massive stone wall, but even this was not strong enough to prevent disaster; evidence shows conclusively that around 1550 BCE the ancient city of Jericho was destroyed.

For more than a century, archaeologists and biblical historians have debated the question of whether this destruction might be evidence of the Battle of Jericho. This is described in the Book of Joshua as the first battle fought by the Israelites in their campaign for the conquest of Canaan. In the biblical account, Joshua’s army marched around the city walls for seven days. On the seventh day, the priests sounded their ram’s horn trumpets, the Israelites unleashed a mighty war cry, and the walls of Jericho collapsed, killing every man, woman, and child in the city.



King Nebuchadnezzar of Babylon, in an undated illustration

According to biblical chronology, this battle would have taken place in 1400 BCE, but modern archaeologists date (with 95 percent certainty) the destruction of Jericho to a century and a half earlier. Because of the discrepancy, modern scholars often dismiss the historical accuracy of the Battle of Jericho, although many biblical historians continue to make claims for its veracity.

Despite this calamity, Jericho rose again in the centuries that followed. By the eighth century BCE it had fallen to the Assyrians. The powerful Babylonian king Nebuchadnezzar also conquered the land of Israel and sent tens of thousands of residents into exile. But the exiles were freed soon after by the Persian king Cyrus the Great. Jericho then served as an administrative center for the Persians, and later as a private estate for Alexander the Great, both of whom were attracted to the city by its strategic location and abundant resources.

Three centuries later, the Hebrew king Herod the Great was granted control over Jericho by the Romans. Under Herod the city flourished as an important agricultural, commercial, and administrative center, and also as a winter resort for Jerusalem's aristocracy. In the first century of the Common Era, the Greek geographer Strabo described the city's environmental advantages like this:

*Jericho is surrounded by mountainous country which slopes toward it like a theater. It is mixed with all kinds of cultivated and fruitful trees, though it consists mostly of palm trees. It is everywhere watered with streams.*

In the same century, according to the Christian Gospels, Jesus passed through Jericho, where he healed a blind beggar and inspired the local tax collector Zacchaeus to repent of his unethical practices.

After the fall of Jerusalem to the Romans in 70 CE, Jericho entered a period of decline, although it remained an important Christian pilgrimage site into the Byzantine period. In the seventh century, Jericho became part of the expansive realm of Islam, and we have another description of the advantages of the city written by the tenth-century Arab geographer Al Maqdisi:

*The water of Jericho is held to be the highest and best in all Islam. Bananas are plentiful, also dates and flowers of fragrant odor.*

During the Crusades, Christians occupied the city until they were driven out by Saladin, the leader of the Arab and Muslim opposition to the Crusaders. Throughout the long reign of the Ottomans, from 1517 to 1918, Jericho slowly shrank to the size of a village and was regularly raided by Bedouins. In the twentieth century, Jericho was controlled at various times by Britain, Jordan, Israel, and the Palestinians. Today Israel and the Palestinian Authority continue to argue over the status of Jericho, and the future of the city and its 20,000 residents is anything but clear.

## Physical endurance

The history of Jericho is rich and complex, punctuated with the same parade of triumphs and tragedies that so many other ancient cities have experienced. But Jericho's status as the most ancient city on Earth makes it unique. This longevity strongly supports the idea that history is ultimately as much about the physical environment in which it takes place as it is about technology or leadership. At the end of the last ice age the Fertile Crescent was favored with an array of natural advantages, which explains not only the emergence of agriculture but also that of the first villages, towns, and cities. These same advantages of geography, flora, fauna, and climate made it possible for the Natufians to establish a small foraging community deep in the tectonic fault of the Jordan Rift Valley, surrounded by natural defensive walls, and blessed with rich soil and a seemingly endless supply of fresh water, that easily transitioned into a thriving agricultural community.

The history of Jericho is a 14,000-year-long reminder that the story of humanity can really be understood only if it is embedded deeply into the natural context in which it has played out, for the environment is truly the great physical stage upon which our human drama continues to unfold.

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An illustration of King Nebuchadnezzar of Babylon

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