THE MEDITERRANEAN

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THE MEDITERRANEAN
An Environmental History

J. Donald Hughes

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CASE STUDIES

In a picture dominated by localism, case studies are extremely important.

—JOHN R. MCNEILL, *THE MOUNTAINS OF THE MEDITERRANEAN WORLD*, 1992

CASE STUDY A: ENVIRONMENTAL PROBLEMS OF CITIES IN MESOPOTAMIA

Climb up on to the wall of Uruk, inspect its foundation terrace, and examine well the brickwork; see if it is not of burnt bricks; and did not the seven wise men lay these foundations? One third of the whole is city, one third is garden, and one third is field, with the precinct of the goddess Ishtar. These parts and the precinct are all Uruk.

—*EPIC OF GILGAMESH*

In the study of the history of Mesopotamia, scholars of the early and mid-twentieth century concentrated on subjects connected with the elite segments of society, such as literature, law, religion, and astronomy. But recent investigations have turned the attention of historians to what were formerly considered to be peripheral subjects, such as environmental, biological, and botanical studies; aspects of subsistence and artifact production and exchange; and materials science research. This broadening of focus has made possible a more holistic approach. Today civilization can be understood more fully because it is seen in its larger setting and in its interactions with the environment.

The appearance of the city as a mode of human relationship to the natural environment established a pattern that would increase in importance for the rest of history. The characteristics of civilization—the state with its religious and political institutions, the specialization of human occupations, the stratification of society into social classes, and the development of arts such as monumental

Part of the clay brick wall of the ancient Sumerian city of Uruk, displayed in the Pergamon Museum, Berlin, is decorated with colored terra-cotta cones. It may serve as a metaphor for the separation of the city from its rural and natural environs. (Photo courtesy of J. Donald Hughes)

architecture, writing, and the measurement of space and time—appeared first and developed most fully in these densely populated human centers. These centers first emerged around 3000 BC in Mesopotamia. Early cities were not large by modern standards: Ur, a dominant city of ancient Sumeria (the southern part of Mesopotamia), attained a population of perhaps thirty-seven thousand. Another great city of the region, Uruk, covered 250 hectares (almost a square mile) and may have accommodated forty thousand people. For a human aggregation of even this size, it was necessary for agriculture to develop to the point where the labor of a farm family could produce enough food to feed not only itself but others as well. This happened with the invention of the ox-pulled plow and incipient irrigation. It was also necessary for society to create the institutions that would organize food production and distribution, the import of useful materials, and the defense of one city against the appropriation of its lands and goods by another. As cities increased their consumptive capacities and the specialization of tasks, a major aspect of their economic relationship with their hinterlands came to be one in which they exchanged manufactured products for raw materials, including the various materials necessary for manufacture.

The Mesopotamian Environment

In order to gain meaningful comprehension of Sumeria and the subsequent cultures, such as the Babylonians and Assyrians, that inhabited Mesopotamia, it is essential to have some understanding of the climate and environment of this region, since these factors are the foundations on which Mesopotamian civilization was built. How much the ancient landscape differed from its condition in modern times must also be investigated. The role of the Tigris and Euphrates, the two major rivers that bring water to Mesopotamia and drain it, is paramount. Except for some montane margins and the Mediterranean coastal sections, this region would be desert were it not for these rivers and the irrigation they make possible. The salt and silt carried down from the surrounding mountains by the rivers created the landscape within which the area's inhabitants lived. The water of the rivers, diverted into artificial canals, was the basis of the people's subsistence.

The fertile, sandy soil of Mesopotamia was easily turned by the ox-drawn plow, but Mesopotamia received little rainfall; indeed, the average precipitation in modern times is less than 200 millimeters (8 inches) in the plain from the Persian Gulf northward to about latitude 36 degrees. Though rivers provided the needed water, their flow was so undependable that control by major irrigation works was required. The most extensive and labor-consuming achievement

of the Mesopotamians, therefore, was the system of canals that brought water to the fields. These irrigation works wrested rich provisions from the basic fertility of the land. Thus a Mesopotamian king could feel justified in listing the excavation of a new canal, along with the conquest of an enemy city, as the major events of his reign. Once the infrastructure of water delivery was constructed, a new agriculture enabled a much larger human population to live in expanded settlements, and many people no longer had to work on the land, so that specialized occupations could flourish in the cities.

Almost all of the early cities arose in the flat, alluvial land of Mesopotamia, where stone or metal for building rarely occurred, and there were few trees large enough for construction, so clay was the dominant material used in ordinary structures. Urban dwellers erected mighty works of baked and unbaked clay bricks: palaces, thick city walls, and temples rising on lofty ziggurats. Pottery vessels were manufactured and used in the production, storage, and consumption of beer, wine, oil, milk, and milk by-products.

The Bronze Age

Copper and bronze metallurgy appeared at much the same time as the early cities, and the period (approximately 3000–1000 BC) is therefore called the Bronze Age. Some of the earliest metal objects were formed from copper and copper alloys that occur naturally in metallic form around the Near East. In the search for additional supplies, metalworkers turned to smelting copper oxide ores, adapting techniques from pottery firing to obtain the high heat that was required. In the process, it was discovered that alloys of copper were superior to the pure metal in hardness and the ability to keep an edge. The preferred metallic material proved to be an alloy of copper and tin called bronze. Metallic ores were almost completely lacking in southern Mesopotamia, but a considerable range of metal artifacts, including jewelry, tools, and weaponry, were manufactured and traded in that region. Evidence exists in the cuneiform and archaeological records for various metalworking and metallurgical activities, including extractive processes. Copper, tin, silver, lead, iron, gold, and their ores were imported from territories on the margin of the Tigris-Euphrates valley and at even greater distances. Commercial, military, and diplomatic efforts were applied to acquire metals. Tin was rare and had to be imported over long distances. The source of tin may have been in alluvial deposits of cassiterite from several places abroad, including the Mediterranean lands, the Indus Valley, and Bactria (modern Afghanistan). Household utensils, decorative and ceremonial objects, and armor and weapons came to be made of bronze.

Religion and Attitudes to Nature

The Mesopotamians were polytheistic. Their gods were awesome powers, visualized in human shape, who had created the world and who continued to direct it from their homes in the sky and beneath the earth. Many gods were personifications of celestial objects, such as Utu, the sun, and his father, Nanna, the moon. The air, waters, and vegetation had their patron deities. These and many other gods and goddesses were worshiped in rectangular temples built of clay brick and adorned with stone and wood, raised above city streets on one-story platforms, and then even higher on the step pyramids called ziggurats. Images of gods and their worshipers, carved in stone with prominent noses and huge round eyes, inhabited temple interiors.

The urban attitude, then, is in large part a desire to improve the environment by imposing order on chaos, and by so doing, to control the natural world. This is done through making direct physical changes. It is also attempted through religion, which in the early urban period was done mainly through sacrifice. Sacrifice is the presentation of gifts to the gods in the form of valuable objects; products of the fields such as grains, oil, or wine; animals domestic or, less commonly, wild; and human sex, human blood, or human lives, in the hope that the gods will reciprocate. Sacrificial worship is directed at contacting the forces that animate the universe, feeding them so the environment will be abundant, satisfying their desires so they will not bring disasters, and in general controlling them for human benefit.

Priests not only indicated the times of planting and harvest and required that a proportion of each year's crop be given for their own support and the worship of the gods, but also created a need for products from far away. The roofs of ever-larger temples required long, straight timbers that the treeless Mesopotamian plain could not supply, and sculpted images had to be made from stone that the alluvial soil did not contain. The far-ranging merchants obtained these products. Merchants were an important segment of Sumerian society, but it must not be imagined that they represented free enterprise. The rulers managed their activities, and when they traveled to other cities, their status was that of quasi-ambassadors. These first merchant-venturers traveled by land and sea. To the east, they traded along all the coastlands of the Persian Gulf and even as far as the Indus Valley. In the west, they brought fine woods from Lebanon and copper from Cyprus, and they were in touch with Egypt almost continuously by way of the Red Sea. Fine timber was also obtained from the Zagros and Taurus mountain ranges, both of which suffered the beginnings of a long process of deforestation. Thus the Mesopotamians transformed distant landscapes through trade.

Apparently, writing first arose in dealings between priests and the merchants who supplied their needs. The earliest examples of symbols impressed into clay are small tokens marked with conventional pictographs, used to keep track of animals, foodstuffs, and other products conveyed from one place to another or kept in temple precincts. Early in the Sumerian period, similar pictographs began to be inscribed on small clay tablets. Soon scribes adopted a triangular-pointed stylus as better suited to the sticky clay surface, and the pictures evolved into arrangements of wedge-shaped (cuneiform) marks. Since these stylized pictures could be given abstract meanings and/or phonetic values, they came to represent the full range of language. Letters, laws, contracts, poems, historical and other documents—all could be written in cuneiform. Sumerian cuneiform was adapted to other languages spoken in Mesopotamia and beyond.

Urban people in Mesopotamia displayed a new attitude toward the natural environment, almost diametrically opposite to that of the hunter-gatherers, herders, and early farmers. A stance of confrontation replaced the earlier approach of reverence and cooperation, as if the barrier of city walls and the rectilinear pattern of canals had divided urban human beings from nature outside them. This attitude can be traced in literature from Sumerian times down through Akkadian and Assyrian writings, which often use the image of battle to describe the new relationship.

In Mesopotamian cities, gender roles seem to have been somewhat strictly divided, and male warriors tended to fill those that were dominant. Men wrote most of the literature, too, although almost certainly not all of it, and images of combat and conquest involving warrior heroes are prominent as a result. Mesopotamian literature is complex, however, and includes survivals from preurban mythologies; warrior goddesses and male earth gods also appear in the sagas of cities. Still, it seems likely that attitudes to nature might have been more supportive if women had constituted a governing force in urban societies.

In creation myths, a hero-god (Enlil or Marduk), the embodiment of civilization, confronted and defeated Nature in the form of a female monster of chaos (Kur or Tiamat). In this outlook, the natural chaotic state of the universe could be overcome and order established only through the conquests made by the gods. The constant labor of their human followers created the order of the city, with its straight streets and strong walls, and the regular pattern of canals in the countryside, all of which were believed to constitute an earthly imitation of the heavenly order that the gods had established. The renowned Mesopotamian law codes included provisions to protect the ownership and divisions of the land.

Careful observation of the heavens motivated many of the Mesopotamian inventions that most influence modern civilization. Records were kept of the movements of the sun, moon, planets, and stars, and the zodiac was divided into the familiar twelve constellations. The circle was divided into 360 degrees, the hour into 60 minutes, and the day into 24 hours. Mathematics also became a systematic aid to land management, business, and the legal system.

The *Epic of Gilgamesh,* whose earliest documents come from Sumeria, and which is perhaps the oldest long poem of which we have any knowledge, reveals the urban Mesopotamian sense of the distinction between the tame and the wild, between civilization and wilderness, and shows a new and hitherto unfamiliar attitude of hostility toward untamed nature. Enkidu, the hairy man of the wild, first appears in the poem as a friend and protector of beasts, but he is a nuisance and even a menace because of that, releasing animals from the traps of hunters and warning them away from their ambushes. When a woman tamed him and introduced him to the pleasures of bread, wine, and sex, his former animal friends caught the scent of civilization upon him and fled. Entering the city of Uruk, he met and struggled with King Gilgamesh, who after winning the almost equal battle adopted him as his inseparable companion. Together they went on a quest to distant mountains for cedarwood. The cedar forest happened to be a sacred grove protected by the wild giant Humbaba, and his defeat and death at the hands of the two heroes became a symbol for the subjugation of the wilderness by the city. Gilgamesh promptly ordered the cedars cut down and carted to Uruk for use in building his new palace. Humankind's proper endeavor with wild things, in the Mesopotamian view, was to tame them. Native animals such as the onager and water buffalo were added to the sheep, goats, pigs, and cattle already domesticated by their ancestors. Animals that successfully resisted subjugation were hunted mercilessly; the epic says that Gilgamesh killed lions simply because he saw them "glorying in life," whereas he as a human being was all too conscious of his mortality.

The stories of Gilgamesh reveal the existence of two warrior institutions under the king: the council of elders or experienced warriors, whose survival through numerous battles gave them the right to be heard by the king; and the assembly of all warriors, who had the right to voice their opinion on declarations of war. The king was expected to consult these bodies but was not bound by their decisions. Though the king was in theory "first among equals," his power could not be doubted. All warriors were citizens with full political rights. In Sumerian cities, there were only two legal classes: citizens and slaves, and the slaves were not especially numerous.

Post-Sumerian History

Sargon the Great, king of Semitic Akkad in central Mesopotamia, conquered the Sumerians around 2300 BC, subordinating the formerly independent governments of the Sumerian city-states to the rule of an empire. Respecting the gods of conquered peoples and claiming divinity himself, Sargon and his successor kings controlled Mesopotamia for two hundred years, controlling major decisions on water use and the allocation of other resources. One of his noted accomplishments was an expedition to the cedar forest (probably in the Amanus Range) in the northwest, doubtless a raid to gain access to timber that was floated down the Euphrates River to the heartland of the empire. His grandson, Naram-Sin, repeated the cedar forest foray but made it more permanent, leaving a garrison and establishing a fort to safeguard the timber road. A celebrated stele with Naram-Sin's image marking the extent of his conquest was left in what is now eastern Turkey.

Eventually the Sargonid Dynasty, weakened by barbarian invasions and local uprisings, gave way and was eventually replaced by the Third Dynasty of Ur, another empire but this time a Sumerian one whose ruler claimed the title "King of Sumer and Akkad." Its most memorable king, Ur-Nammu, promulgated a law code with notably mild punishments. He ruled through provincial governors chosen from among Sumerians and Akkadians alike, and in the city-states he posted representatives called *ensis,* who were usually chosen from the local people of the particular city. His son Shulgi collected fair and well-recorded taxes in goods and animals. Factories controlled by the government produced textiles, flax oil, leather, flour, beer, and wine, and provided jobs for thousands of women and men. Despite such an enlightened policy, the Third Dynasty succumbed to secession and foreign invasion.

Hammurapi, king of the great city of Babylon, united Mesopotamia by conquest soon after 1800 BC. He is deservedly remembered for his systematic law code, which survives almost intact in a stone stele carved with a cuneiform text that reveals much about the social and economic structure of his kingdom. It safeguarded the economy by protecting businesspeople, traders, and landowners. The leading warriors, priests, and civil servants made up the nobility, which had special privileges, particularly in the ownership and management of land. All other free citizens were commoners, whose status also was guarded by law. Many of these citizens conducted the long-distance trade that supplied both luxuries and essential raw materials; they operated under the law's protection. The third and lowest class in this stratified society was that of slaves, who were recognized as human beings but whose limited status depended upon their value as the property of others.

Assyria, expanding from a homeland on the banks of the Tigris River in northern Mesopotamia, became one of the ancient world's largest and most powerful empires, dominating all of Mesopotamia including Babylon, the entire seacoast of the Mediterranean Levant, and briefly Egypt and much of Iran. Assyria appeared as an important kingdom in the thirteenth century BC, made its most important conquests in the ninth and eighth centuries BC, and perished at the hands of an alliance of enemies in the late seventh century BC. The first impression one gains from the surviving ancient sources is that Assyria was a militaristic, aggressive, and merciless power. This is in part due to the fact that many of the sources were written by Assyria's adversaries and victims. For example, the prophet Isaiah, who lived in Jerusalem in the eighth century BC and witnessed an Assyrian invasion, spoke for his God, Yahweh, as follows (Isaiah 10:5–6):

The Assyrian! He is the rod I wield in my anger,
The staff in the hand of my wrath.
I send him against a godless nation,
I bid him march against a people who rouse my fury,
To pillage and plunder at will.
To trample them down like mud in the street.
But this man's purpose is lawless,
And lawless are the plans in his mind;
For his thought is only to destroy
And to wipe out nation after nation.

This violent impression is borne out by the inscriptions of the Assyrian kings themselves. From their point of view, it was their own god Assur who had ordered them, his earthly representatives, to conquer. Assurnasirpal II (ruled 883–859) announced, "I am merciless . . . first in war, king of the world . . . who has trampled down all who were not submissive to me." He carried out these words with deliberate atrociousness. He demanded booty and tribute as tokens of submission, and he was not the only Assyrian king to use mass deportations of subject peoples as instruments of his economic policy. Some of them were used in the construction of his magnificent palace in his new capital of Kalah (Nimrud), and others labored at specialized tasks in military support, industry, trade by land and sea, and agriculture. Assyrian kings also appropriated the gods of their conquered peoples, most notably those of Babylon, and carried their images to Assyrian temples or appropriated them in situ in the temples of dependent cities.

The Assyrians put together the world's first truly efficient Iron Age army, a military machine of unequalled efficiency. Their artisans were excellent metallurgists, skilled in smelting, enameling, and inlaying and in making iron arms

and weapons, including swords, shields, helmets, long lances, and heavy bows. Slingers, bowmen, and lancers composed their infantry, and they also could field a formidable cavalry and chariots drawn by horses. Assyrian engineers could construct bridges, tunnels, moats, and efficient siege weapons that could take fortified towns, as their reliefs show with vivacity. Many of the Assyrian army units were levied from conquered territories and placed under Assyrian commanders. Supplies for the army, including fuel for iron smelting and timber for the construction of siege machinery, placed severe demands on the forests located in the mountains to the north and east of the Assyrian plains.

The effect of Assyrian conquests on the Near Eastern landscape was major, but not completely destructive. Systematic mass deportations of agricultural peoples must inevitably have affected the lands for which they had been caring. These lands were parceled out as rewards to Assyrian military men and businessmen, making them great landowners, but as they consolidated their properties the kings began to feel threatened by them and took measures to break up the landholdings. This led to the so-called Great Revolt of 827–822 BC by the rural nobility and powerful provincial governors against King Shalmaneser III, which was put down with extreme difficulty and great cruelty by the court and army. Subsequently, administrative reforms strengthened royal power, weakened the large private landholders, and established new, smaller provinces that limited the resources available to the governors and reduced their ability to threaten the central government.

The Assyrians were great city-builders, and the urban centers of the kingdom grew as the empire was able to commandeer the resources of the lands it dominated. Sennacherib (ruled 750–681) moved the capital to the renowned city of Nineveh, which he fortified with 1,500 watchtowers and five walls that were wide enough on top for three chariots to drive abreast. The walls were pierced by 15 gates and protected by three moats, one inside the other. A great aqueduct supplied the city with water.

One must balance the portrayal of the Assyrians as a ruthless militaristic people with the evidence of a highly developed civilization that was found in a city such as Nineveh. There were thirty temples. The royal palace had a huge park that contained the world's first botanical and zoological gardens and a sacred fishpond. Indeed, the fishpond served as the city's identifying cuneiform sign. Nineveh was not only the administrative center of the empire but also an admirable focal point of literature and learning. Assurbanipal (ruled 668–627) and his brother Shamash-shum-ukin (668–648) assiduously collected clay cuneiform tablets from throughout their dominions and created the Great Library of Nineveh, which contained works on mathematics, astronomy, and astrology as well as official correspondence, business records, dictionaries, and

many texts of literary value. The discovery of the remains of these records by Austin Henry Layard in 1845 made possible the recovery of much of Sumerian, Akkadian, and Assyrian literature, including major fragments of the *Epic of Gilgamesh.* Thus we can be grateful for the culture preserved by Assurbanipal, even if he did hang the head of the rebellious king of Elam in his garden so he could gloat over it.

It is interesting that the book of Ezekiel in the Hebrew Bible, written between 593 and 571 BC after the fall of the Assyrian Empire, describes the rise and fall of Assyria through an environmental image. Assyria, states Ezekiel, was like a cedar of Lebanon, the greatest of trees in the world, and the peoples of its empire found shelter like the birds and animals of the forest in its branches and under its shade, sharing the springs of water that nourished it. But foreigners had ruthlessly cut down the tree, and the peoples of the Earth left because they could no longer find shade under its branches, while the birds and wild animals gathered on its fallen trunk, seeking refuge in vain, since the springs of water had dried up. This view of Assyria as a devastated ecosystem is remarkably sympathetic, coming as it does from a member of one of the nations formerly threatened by Assyria. It was the resurgent Babylon, however, one of the nations that had laid Nineveh waste, that had also carried Ezekiel's nation into captivity. Ezekiel simply believed that Assyria, like other nations, was an example of God's care for the nations in endowing them with physical and biological resources. It is certainly likely that the image of the downfall of Assyria as a fallen tree may reflect the extent to which Assyria overused the natural resources of its empire.

Environmental Problems of Mesopotamia

Throughout their history, the Mesopotamian cities were in continual danger of flooding; the Tigris and Euphrates rivers rose over their banks unpredictably, destroying settlements and fields, which is one reason why the inhabitants regarded nature as chaotic. The system of canals and dikes was intended to serve not only for irrigation but also for flood control. Cities accumulated mounds, rising above the plain and, if they were lucky, above the floods.

Growth in number and density of population produced problems of pollution, waste disposal, and the spread of diseases, affecting the health, stature, and longevity of the inhabitants. Drinking water was drawn from wells, rivers, and canals subject to contamination. Mesopotamian documents mention the danger of death from drinking bad water. To pollution from sewage and offal were added wastes from industrial activities such as metallurgy, leather tanning, and pottery

kilns. These accumulated until rain washed them into rivers and groundwater. A few early cities arranged for removal or built sewers and latrines similar to those found in the ruins of Knossos on Crete. Wastes as well as the concentration of human bodies and stored foodstuffs attracted opportunistic organisms.

Human health suffered by every measure. Neolithic villagers were less healthy than hunters and herders, but city dwellers showed further decline; studies of their skeletal remains show that they were shorter in stature, lived briefer lives, suffered more from bad teeth and bones, and were subject to communicable diseases. To these dangers must be added warfare, slavery, and human sacrifice. An unconscious trade-off had been made that forfeited quality of life for quantity of humans and more security for the community. For individuals, urban life was not necessarily an improvement over earlier societies.

The mud and silt carried by rivers and canals settled out rapidly. Continuous dredging was required to keep the canals flowing, and the excess material piled up along their banks until the canals were fifteen meters or more above the surrounding fields, so that they could no longer serve to drain the land and presented a danger of overflow in time of flood. Salinization, the accumulation of salts in the soil as a result of water evaporation, is a constant menace wherever irrigation is practiced in dry climates, and in Mesopotamia it was unfortunately widespread. The lower sections of the valley of the Tigris and Euphrates have, as noted earlier, an arid climate, and the soils are relatively impermeable, two factors that can lead to an accumulation of salt at levels that are harmful to soil texture and to crops, and which if continued can eventually make agriculture impossible in the areas affected. Irrigation water carried into low-lying areas was allowed to evaporate, and over the years in this land of low humidity and meager rain, the salts accumulated. The conditions of poor drainage also made it difficult to correct the situation by leaching salt from the fields. Groundwater became increasingly saline. Farmers tried to adapt to the changing conditions by planting salt-tolerant barley instead of wheat, which was more sensitive to salt. Crop yields declined; for example, in the agricultural lands of the city of Girsu, there was a reduction of 47 percent in production of grain in liters per hectare between 2400 and 2100 BC. In extreme cases, cultivated plants were entirely incapable of growth in salinized soil. Because of this, many areas had to be abandoned, while new sections were brought under irrigation and cultivation until they in turn suffered similar effects. A survey by Thorkild Jacobsen and Robert Adams (1958) found evidence in temple records of increased salinity and declining yields in southern Mesopotamia between 3500 and 1700 BC, and they identified this trend as contributing to the breakup of Sumerian civilization. Their judgment: "That growing soil salinity played an important part in the breakup of Sumerian civilization seems beyond question" (1252).

They considered that measures to counteract siltation and salinization might have succeeded, but that the authorities in charge of the cities were preoccupied with military adventures and political intrigues. Regrettably, the same problem persists in modern times, exacerbated by conflicts over the development of some of the world's richest deposits of petroleum.

Conclusion

The recovery of evidence concerning the relationship between ancient Mesopotamian civilizations and the natural environment depends on the preservation of clay tablets bearing cuneiform texts and other artifacts that represent economic activities, including artistic representations of these activities and the vessels in which various products were contained. These artifacts were collected in careful archaeological excavations conducted by European, American, and Iraqi scholars over many decades of the nineteenth and twentieth centuries. The objects themselves and the records relating to their excavation were placed in museums such as the Louvre, the British Museum, the Oriental Institute of the University of Chicago, and the University of Pennsylvania Museum in Philadelphia. Most important, they were located in the National Museum of Iraq and in regional museums in Iraq. This was especially true of material excavated recently, since Iraq understandably wished to keep treasures representing its historic heritage within the country, and to stop the removal of these treasures to museums in other nations. Unfortunately, during the first Gulf War of 1991, nine out of thirteen of the regional museums experienced looting and lost valuable antiquities. This loss, although serious, pales in comparison to the looting and vandalism of the National Museum of Iraq and other archaeological sites in 2003 and the destruction of museum records and others in the National Library. The resulting loss to the study of the history of this land and people, who produced the first civilization, the first writing, and many other contributions to literature and science, is a crime against human knowledge.

Isolated mounds in a desert environment now mark the locations of the renowned cities of ancient Mesopotamia, and photographs taken from space show that the fertile land occupies a fraction of its former extent. These effects are not the result alone of climatic change or of warfare, although both have occurred throughout the centuries. They embody the epitome of ecological disaster caused by human actions. In Mesopotamia, perhaps more than in any other region, there is a clear relationship between environmental degradation brought about by destructive human actions, whether intended or not, and by cultural decline.