

The First Environmental Disaster

*In Sumer, between 2037 and 2004 BC,
the Third Dynasty of Ur is conquered
by invasion, rebellion, and famine*

IN THE NEO-SUMERIAN EMPIRE ruled by the Third Dynasty of Ur, the reign of law and order was impressive but short-lived.

After his enormously long and prosperous forty-seven-year reign, Shulgi passed the throne to his son, who by then was well along in years himself; after his brief eight-year rule, Shulgi's grandson Shu-Sin inherited in turn. Under this fourth generation of the Ur III Dynasty, the empire began to fall apart.

Shu-Sin's reign faced a threat which had been steadily growing: Amorites, the Western Semitic nomads who were now roving along the western border, between Canaan and the borders of the neo-Sumerian realm. The Sumerians called them "the Martu" (or "Amurru") and were doomed to meet them in head-to-head rivalry for something that was in increasingly short supply: fertile land.

FOR CENTURIES NOW—perhaps for millennia—the cities on the plain had grown enough wheat to support their burgeoning populations through irrigation: digging channels from the riverbanks into reservoirs, so that rising waters would flow into storage tanks, from where they could be channelled in dryer months over the fields.

But the waters of the Tigris and the Euphrates, although fresh enough to support life, were very slightly salty. When this faintly brackish water sat in reservoirs, it collected more salt from the mineral-rich land. It then ran out over the fields and stood in the sun. Most of the water soaked into the earth, but some evaporated, leaving slightly more salt on the ground than had been there before.

This process, called *salinization*, eventually led to such a concentration of salt in the ground that crops began to fail.* Wheat is particularly sensitive to salt in the earth. Accounts from the Sumerian cities show, in the years before 2000 BC, a progressive switchover from wheat to barley, which can tolerate more salt. But in time even barley refused to grow in the salty soil. Grain grew scarce. So did meat, since there was not only less grain for humans, but less for animals, who had to be taken farther and farther afield to find grass.

Right around the reign of Shu-Sin, a Sumerian scribe notes that the earth in certain fields has “turned white.”¹ An occasional proverb shows that the problem of rising salt was on farmers’ minds; in a collection from the same time, one proverb asks, “Since beggars don’t even know enough to sow barley, how can they possibly sow wheat?” Another proverb remarks that only a “male” rising of the river—presumably, a particularly powerful one—will “consume the salt” in the soil.²

The farmers of Sumer were not so ignorant of basic agriculture that they did not understand the problem. But the only solution was to avoid planting every other year, in a practice called “weed fallowing”—allowing weeds with deep roots to grow, lowering the water table and allowing salt to wash back down beneath the topsoil.³ In the meantime, what would the cities of Sumer eat? And how would the increasingly strict tax burden, made necessary by a large and highly structured bureaucracy organized by Shulgi and preserved by his heirs, be shouldered?

In the absence of weed fallowing, fields could grow so toxic that they would have to be abandoned entirely, perhaps for as long as fifty years, to allow the soil to recover. This made the Amorite trespass on Sumer’s fertile fields not a matter of annoyance, but of life and death. The Mesopotamian plain did not have an unlimited expanse of fields; it is what anthropologists call “circumscribed agricultural land,” sharply defined by surrounding mountains and deserts.[†]

The growing scarcity of grain made the Sumerian population generally hungrier, less healthy, more fractious, and less able to defend itself. Lacking the full measure of grain tax, the court of the Ur III Dynasty could not pay its soldiers. The trespassing Amorites could not easily be driven away.

* Technically, salinization involves not only the accumulation of salt, but an actual chemical reaction that changes the soil’s mineral content; it is “the process by which soluble chemical salts accumulate in soils and change their chemical composition” (D. Bruce Dickson, “Circumscription by Anthropogenic Environmental Destruction,” in *American Antiquity* 52:4 [1987], p. 711). Dickson points out that the waters of the Tigris and Euphrates are also high in calcium, magnesium, and sodium, which tend to precipitate soluble salts out of the soil.

† Compare this with the wandering populations that later occupied the North American continent, who could move across a practically unlimited expanse of fertile land (R. L. Carneiro, “A Theory of the Origin of the State,” *Science* 169 [1970], p. 727).

In the first three years of his reign, Shu-Sin lost progressively more of his frontier. By the fourth year, he was desperate enough to try a brand-new strategy, one unused before: he ordered a huge wall, 170 miles long, built across the plain between the Tigris and the Euphrates, in a frantic attempt to keep the Amorites away.

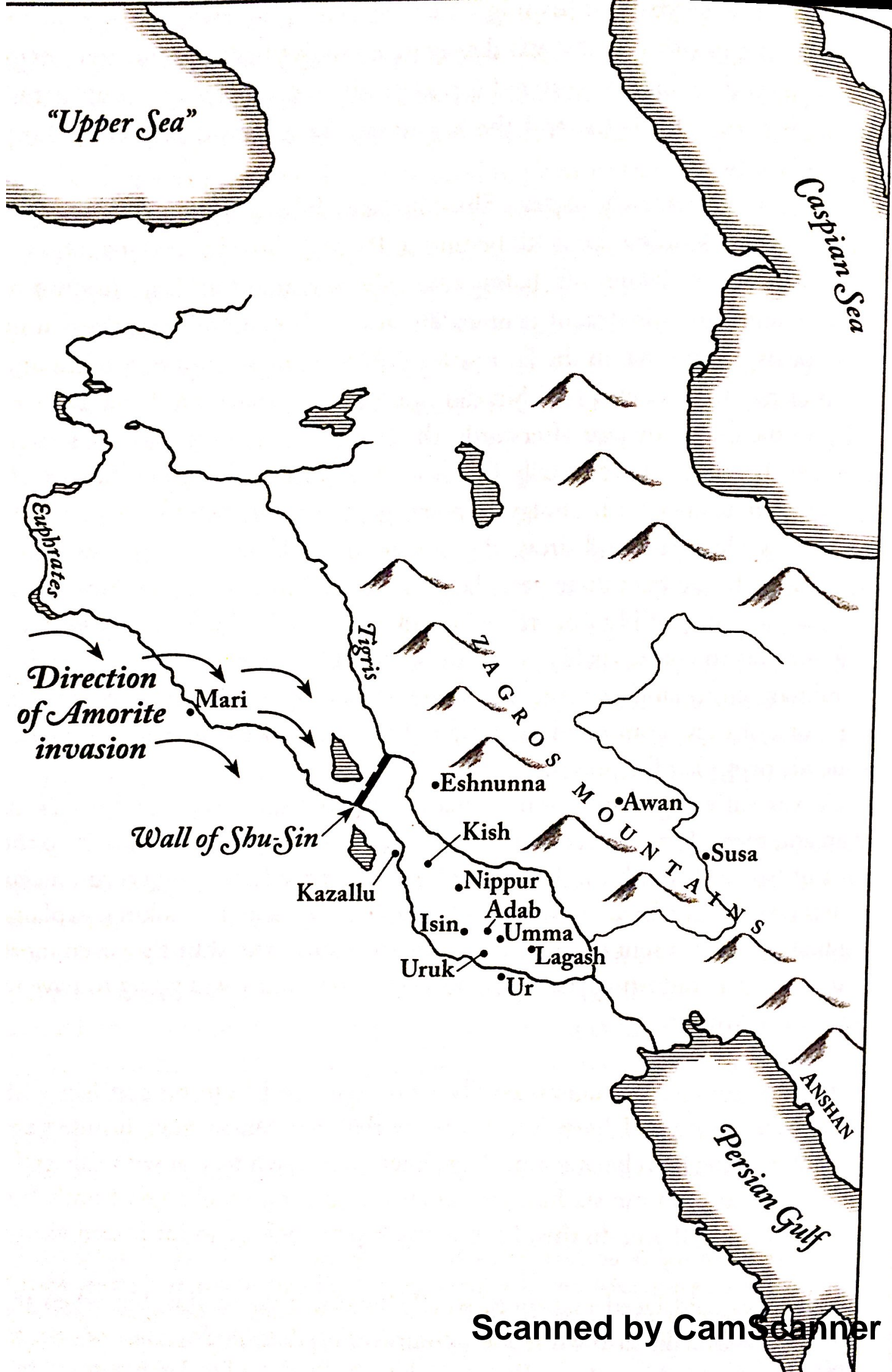
The wall was ultimately useless. Shu-Sin's son, Ibbi-Sin, soon gave up even the pretense of defending the fields behind it. Poverty, disorder, and invasion led to bits of his realm flaking off, falling not only to marauding Amorites but to his own hungry and discontent people. When Ibbi-Sin had been on the throne for two years, Eshnunna, in the far north of his remaining empire, rebelled and refused to pay tribute, and Ibbi-Sin did not have the soldiers to bring the city back into the fold. The year afterwards, the Elamite king of Anshan—a principality which had been technically free from Sumerian domination, but which had made an alliance with Shulgi by marriage, fifty years before—rejected the half-century-old treaty and drove the Sumerians back out of Susa. Two years later, Umma broke free; three years later, in the eighth year of Ibbi-Sin's reign, the prestigious city of Nippur refused to acknowledge his lordship any longer.

Worse was to come. As his power declined, Ibbi-Sin had taken to granting his military commanders more and more autonomy. In the tenth year of his reign, one of these commanders, a man of Semitic descent named Ishbi-Erra, made his own play for power.

Ur was suffering from famine, thanks to those salty fields and a lack of grain and meat; Ibbi-Sin sent Ishbi-Erra, his trusted commander, north to the cities of Isin and Kazallu to fetch supplies. A series of letters preserved on clay tablets reveal Ishbi-Erra's strategy. First, Ishbi-Erra wrote to his king, explaining that if Ibbi-Sin sent more boats up the river and gave Ishbi-Erra even more authority, he could bring the grain; otherwise, he simply was going to have to stay in Isin with it.

I have spent twenty talents of silver on grain, and I am here in Isin with it. Now, though, I have heard reports that the Martu have invaded the center of the land between us. I can't get back down to you with this grain unless you send me six hundred boats and put me in charge of both Isin and Nippur. If you do this, I can bring you enough grain for fifteen years.⁴

This was bald-faced extortion, which became clear to Ibbi-Sin when the governor of Kazallu also wrote him, complaining that, under cover of collecting grain for his king, Ishbi-Erra had seized Nippur, plundered a couple of nearby cities, asserted his dominance over several more, and was now threatening to take over Kazallu as well. "Let my king know that I have no ally," the governor complained, pathetically, "no one to walk at my side."



"Upper Sea"

Caspian Sea

Euphrates

Tigris

ZAGROS MOUNTAINS

Direction of Amorite invasion

Mari

Wall of Shu-Sin

Kazallu

Eshnunna

Awan

Susa

Nippur

Adab

Isin

Umma

Lagash

Uruk

Ur

ANSHAN

Persian Gulf

Ibbi-Sin was helpless to do anything against Ishbi-Erra, who had many of his soldiers and most of the food. His return letter to the governor of Kazallu has the testiness of desperation:

I gave you troops, and I put them at your disposal. You are the governor of Kazallu. So how is it that you did not know what Ishbi-Erra was up to? Why didn't you . . . march against him? Now Ishbi-Erra can claim to be king. And he isn't even Sumerian. Sumer has been prostrated and shamed in the assembly of the gods, and all the cities that were your responsibility have gone straight over to Ishbi-Erra's side. Our only hope is that the Martu will capture him.⁵

The Amorites didn't capture Ishbi-Erra, and—as Ibbi-Sin had feared—the straying commander announced himself the first king of “Isin Dynasty,” with his capital city at Isin and his territory the northern lands that had once belonged to Ur. The Isin Dynasty would resist Amorite capture and rule over the northern part of the plain for two hundred years. Meanwhile, Ibbi-Sin was left with only the very heart of his disintegrating empire, Ur itself, under his control.

At this point, the vultures landed. In 2004, the Elamites—now reunited into one, Sumerian-free realm under the rule of a king named Kindattu—were ready to revenge themselves for decades of domination. They swept over the Tigris, broke down the walls of Ur, burned the palace, levelled the sacred places, and brought a final and shattering end to the Sumerian era. The fields that were not already barren from salt were burned, and Ibbi-Sin himself was dragged away as a captive to Anshan.

Later poems mourn the fall of Ur as the death not just of a city, but of an entire culture:

Corpses were piled at the lofty city gates,
on the streets where festivals had been held, heads lay scattered,
where dances had been held, bodies were stacked in heaps. . . .
In the river, dust has gathered,
no flowing water is carried through the city,
the plain that was covered in grass has become cracked like a kiln.⁶

Ur's collapse showed not just the weakness of Ibbi-Sin but, more ominously, the impotence of the moon god Nanna and the patron deities of the fallen cities, gods who could not protect their own.

Father Nanna,
your song has been turned into weeping,

EGYPT	MESOPOTAMIA
<i>Dynasty 5 (2498–2345)</i>	Lugalzagesi (Umma) Urukagina (Lagash)
<i>Dynasty 6 (2345–2184)</i>	Akkadian Period (2334–2100) Sargon Rimush Gutian invasion
First Intermediate Period (2181–2040)	
<i>Dynasties 7 & 8 (2181–2160)</i>	
<i>Dynasties 9 & 10 (2160–2040)</i>	Fall of Agade (c. 2150)
	Third Dynasty of Ur (2112–2004) Ur-Nammu Shulgi Abram travels to Canaan
	Fall of Ur (2004)

your city weeps before you, like a child lost in a street,
 your house stretched out its hands to you,
 it cries, "Where are you?"
 How long will you stand aside from your city?⁷

Abram and Terah had fled from Ur and from the worship of the moon-god, afraid that he could not protect them. Ultimately he could not even protect his own temple. The old nature-god, like the fields of Ur themselves, had lost his potency.

The age of the Sumerians was finally over. Semites, both Akkadian and Amorite, and Elamites dominated the plain, which would never again be as fertile as it had been back in the days of the earliest kings, when fresh water ran through green fields.*

* Even today, something like 60 percent of the previously fertile land of Iraq (the country which now claims much of Mesopotamia) is uncultivable because of centuries of built-up salt and chemicals.