

# The Water Under Angkor

PASSAGE · NON-FICTION

SKILLS TRAINED

Working memory

Delayed recall

Critical analysis

## HOW TO USE THIS SHEET

About 25 minutes

- 1 Read the passage twice, slowly. Take about eight minutes.
- 2 Turn to the next page and cover this one. No looking back.
- 3 Write what you remember, then mark it on the last page.

The largest structure at Angkor is not a temple. It is a rectangular reservoir called the West Baray, about eight kilometres long and two kilometres across, held in by earth embankments raised above the surrounding plain rather than dug down into it. There is a second great reservoir to the east, now dry, and a third to the north, and between and around them run hundreds of kilometres of canals, channels, moats and embanked roads. The Khmer kings who ruled from here between the ninth and fifteenth centuries built temples in stone, but they moved an almost unimaginable quantity of earth.

In the 1970s the French archaeologist Bernard-Philippe Groslier proposed a name for what all this earth was for: the hydraulic city. His argument was that the reservoirs and canals formed a working irrigation system, that they allowed rice to be grown through the dry months as well as the wet, and that the surplus fed a population large enough to quarry and raise the temples. On this reading Angkor's engineering explains Angkor's art.

Other scholars disagreed, and their objection was not vague. The barays, they pointed out, sit high in the landscape and have very few obvious outlets; water cannot easily be led from them onto the fields below. Their shapes are precisely rectangular and precisely oriented, which irrigation does not require and which Khmer cosmology very much does — a temple-mountain surrounded by a ring of water reproduces the sacred mountain surrounded by the ocean. On this reading the reservoirs are enormous religious statements, and the rice was grown, as it still is, on the rain.

For thirty years the two camps read the same earthworks in opposite ways. What changed the argument was not a new theory but a new kind of looking. Airborne radar, and later laser scanning flown across the forest in 2012 and 2015, stripped away the canopy and mapped the ground beneath it. What appeared was not a temple complex with a few reservoirs but a low-density city spreading over something like a thousand square kilometres: house mounds, ponds, field boundaries, and a web of channels and embankments connecting all of it.

The maps did not simply hand the argument to Groslier. They showed water being moved deliberately on a vast scale, which supports him, but they also showed the system was no single design: it was patched, extended and redirected over centuries, with channels cut across older ones and embankments raised on top of earlier work. A network like that is hard to read as one grand irrigation scheme and equally hard to read as pure symbolism. It looks like something built for several reasons at once, by people who kept adjusting it.

The maps also showed it breaking. There are channels scoured far deeper than their builders intended, spillways forced through embankments, and structures abandoned mid-alteration. Tree rings from the region record what happened to the weather in the fourteenth and fifteenth centuries: long droughts interrupted by exceptionally heavy monsoons. A sprawling network of earth channels is well suited to a steady climate and badly suited to that one — too little water to fill it, then too much at once for the embankments to hold.

So the question has changed shape rather than closing. Nobody now doubts that Angkor managed water on a scale nothing else in the pre-industrial world matched, and nobody now claims the barays were only irrigation tanks or only sacred seas. The live dispute is about dependence: whether that network was the thing holding a million people in one place, so that its failure brought the city down, or whether it was one system among several and the city emptied for the ordinary reasons cities empty — trade moving, power moving, people following it south.



- 4 The surveys revealed a “low-density city”. What does that phrase tell you about how Angkor was laid out?

---

---

- 5 What is the writer's attitude towards the long disagreement between the two camps, and how can you tell?

---

---

- 6 How far did the aerial surveys actually settle the dispute? Weigh what they resolved against what they left open.

---

---

---

- 7 Evaluate the argument that the climate record explains why Angkor emptied.

---

---

---

## PART C Mark your own work

Now go back to the passage. Tick every answer you got right. You do not need the same words as the answer below — if you wrote the same idea in your own words, it counts.

- ☐ 1 • It is about eight kilometres long and two kilometres across, held in by raised earth embankments. Groslier called his explanation the hydraulic city.
- ☐ 2 • Because irrigation gains nothing from exact geometry — a tank only needs to hold water and let it out downhill — whereas Khmer cosmology does require it, since a temple-mountain ringed by water reproduces the sacred mountain surrounded by the ocean. A feature that serves the religious purpose and not the practical one points to the religious reading.
- ☐ 3 • Because both treated the earthworks as the expression of a single intention — one grand irrigation scheme, or one coherent religious statement. Channels cut across older channels and embankments raised on earlier work show generations of adjustment instead, which suggests the network grew to meet several needs at once rather than being designed to prove either case.
- ☐ 4 • It means the population was spread thinly over a very large area rather than packed into streets. House mounds, ponds and field boundaries were scattered across something like a thousand square kilometres, so the city was more like an enormous inhabited landscape of farms and channels than a dense urban centre.
- ☐ 5 • Respectful of both and impatient with neither. The objections to Groslier are introduced with the remark that they were “not vague”, each side's reasoning is given its strongest form, and the survey results are explicitly said not to “hand the argument to Groslier”. The writer's interest is clearly in how the question improved rather than in declaring a winner.
- ☐ 6 • They settled the scale and the fact of deliberate water management: a thousand square kilometres of house mounds, ponds, field boundaries and connecting channels cannot be explained as symbolism alone, so the purely cosmological reading cannot stand in its strong form. They also undercut Groslier, though, by showing the network was patched and redirected over centuries rather than designed, which is hard to call a single irrigation scheme. What they left open is the question the passage ends on — whether the city depended on the network — because a map shows what was built and used but not how much everything else rested on it. The surveys replaced a crude either-or with a harder and better question.
- ☐ 7 • The strongest version is genuinely persuasive: tree rings record long droughts broken by exceptionally heavy monsoons in the fourteenth and fifteenth centuries, and the surveys found exactly the damage that sequence would cause — channels scoured far deeper than intended, spillways forced through embankments, structures abandoned mid-alteration. An earth network suited to steady rainfall would fail under that weather. The weakness is that failure of the network only explains the city emptying if the city depended on the network, which is precisely what remains disputed, and the ordinary explanations the passage lists — trade shifting, power shifting, people following it south — would leave much the same physical record. The climate evidence is strong about the infrastructure and only suggestive about the abandonment.

FACTS RECALLED IN PART A

—

QUESTIONS CORRECT

— / 7

DATE

\_\_\_\_\_

## THE STRATEGY Steelman the other side

Before you decide which explanation you believe, build the strongest possible version of the one you believe less — not the weak version that is easy to knock down, but the case its cleverest supporter would make. You will often find it rests on evidence you had skimmed past. Doing this forces you to handle every fact in the passage rather than only the convenient ones, and facts you have had to defend are the ones you can still produce a week later.

## WHERE YOU ALREADY DO THIS

When did you last argue the opposite of what you think — in a debate, a group decision, or just in your head? What did you notice about your own position afterwards?

---



---

**FOR THE PARENT OR TEACHER** · This sheet trains delayed recall, not reading speed. Let your teenager read the passage once, then cover it completely before Part A — no glancing back and no prompting, because the effort of hauling a half-remembered fact out of memory is what fixes it there. At this level mark the thinking rather than the wording: the answers given for the inference, tone and analysis questions are one good response each, not the only one.