Water and Classical Civilizations: Crash Course World History 222

Crash Course: World History
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=====Introduction=====

Hi, I'm John Green, this is Crash Course World History and today we're gonna talk about our old friend, the rise and fall of civilizations.
And we're gonna look at it through the lens of war! No, just kidding - resources.

Me From the Past: Really, Mr. Green? Haven't we mined that topic enough?

John: I see what you did there, Me From the Past, and I do like your puns. I don't like much about you, but I like puns.

So, we do talk a lot about resources and environmental issues in this series, because, you know, they're important. You know, 'cause we just have the one planet on which we can have history. But today we're gonna switch things up by looking at time periods and regions and a resource that we haven't examined before. So rather than like, food or animals or precious metals, today we're going to talk about water, without which we wouldn't have food or animals. And precious metals would be of very limited use, because we also wouldn't have humans. And we're going to travel to the classical Mayan and Khmer civilizations in Central America and South East Asia respectively. Well, we're not actually gonna travel there because we don't have the budget for a time machine.

(Intro)

=====The Importance of Water=====

So not only would we all die of thirst without water, we also need to have enough of it around to raise plants and animals because, you know, that's how we eat. Now, some places get enough rain to support agriculture, but the vast majority don't, which is why irrigation is often a requirement for building cities and stuff. And then there are places on Earth that get too much water, often because seasonal rains cause rivers to flood and in these places, people need to build dams and levees to control the flooding and also to channel the extra water to places where it can be useful.

These kinds of projects and reservoirs and wells and cisterns are all examples of water control or what some people call hydraulic engineering. So we know that we need agriculture for cities and for what we call civilizations, and in most places, some form of hydraulic engineering is necessary for agriculture which means that it's necessary for, like, everything that comes after.

But water isn't just for drinking and eating, like those of you who remember the Indus Valley episode recall that Mohenjo-daro featured a giant basin that we call the great bath, which historians believe had a ritual function. And even if it didn't, bathing is important for keeping clean. You know, one of the things we use water for is sanitation and hygiene.

And in dry regions, the ability to control water can be symbolic of wealth and power. I mean, look at Las Vegas. Why do you think that there's this fountain at the Bellagio hotel in Las Vegas in the middle of a desert? It's a way of bragging - look at all of the money we took from you at our casino.

=====The Mayan Civilization=====

But quite a while before that, the Mayans managed to build a remarkably complex culture in one of the world's least hospitable regions and they couldn't have done it without water management.

The Mayan culture reached its peak between 250 and 900 CE and it was centered in the Yucatan peninsula in what is now Mexico and reached into parts of what today are Guatemala, Honduras and El Salvador. The Mayans developed complex mathematics, primarily used to create calendars that do not predict the end of the world and they also had a writing system which described their religion and their rulers, the holy lords, who were both political and religious leaders.

When the Mayan civilization collapsed, it wasn't because all the people died out - I mean, you can still find many a Mayan today - but because those holy lords lost their authority. At which point the Mayans stopped living in their massive temple complexes, but we should start at the beginning. Let's go to the thought bubble.

So as we mentioned before, the Yucatan is not an ideal place to build a civilization. Most of it is a karst plain with a bedrock of limestone, the soils are poor and the water table is too low to excavate wells without modern digging equipment. There aren't many rivers and rainfall is highly seasonal with torrential downpours during the unpredictable wet season and a long dry season.

Much of Mayan agriculture was small scale, but it produced enough surplus to provide tribute for the holy lords. Archaeological records show that by 1000 BCE, people were digging ditches to drain swamps, and settlements were built in such a way to capture rain runoff.

Tikal is one of the major mining centers that has over 3000 structures in its 16 square kilometer footprint. It took generations to build and, according to Steven Mithen, "...it entirely lacked a natural supply of water. No springs, rivers or lakes in its immediate vicinity." So to supply water for the estimated 60 000 people who lived and worked there, they created reservoirs.

But diverse environment meant diverse solutions to water issues. At Edzna, they built cisterns to capture rainwater and canals to connect reservoirs to the central ceremonial complex. They were able to collect 2 million cubic meters of water from runoff.

At Palenque in the lowlands of Chiapas, they built aqueducts and dams and drains and a bridge to control flooding caused by streams that fed the city. And in all these places, water management required a ton of labor. How much of this was cooperative and how much was coerced, we can't really say. Thanks, Thought Bubble.

Another thing we don't really know for sure is the role that water played in Mayan politics and religion, but we can make some educated guesses. Mayan art features a lot of water motif, so much so that one scholar has described the Maya as "having a fascination with aquatic iconography." It's also quite possible that the authority of the holy lords rested on their ability to control water.

Like anthropologist Lisa Lucero has argued that the holy lords controlled the reservoirs and distributed water to the people during the dry season in return for tribute in the form of food and labor. And if this was true, it was a very dangerous game to play for the holy lords, right? Because basing your claim to power on an ability to bring rain can get you in trouble if, like, a drought comes along. And, of course, they do. Mexico, in fact, can be particularly vulnerable to drought related to our old historical actor friend El Niño.

=====Open Letter=====

Oh, it's time for the open letter. But firstly, let's see what's on the globe today. Uh oh! It is a warm swirl of water off the coast of South America. An open letter to El Niño:

Hey, El Niño.
You mean, 'the boy'. 'The boy', man, meteorologists are the only people in the world worse at naming things than historians. But the boy in question is Christ, like as a child. And that shows that our deep connection between weather and religion goes back a long time.

Now, like a lot of weather patterns, El Niño, you have your upsides and your downsides. But in the end, El Niño, what I find so fascinating about you is that you can make and unmake civilizations and kings and queens in a way that no one else can. Well, except maybe the Mongols.

So yeah, El Niño, people could talk about Cleopatra and Alexander the Great and Hammurabi, but you're where the real action is.

Best Wishes,
John Green

=====The Khmer Civilization=====

Right, so, scientists, using tree rings and ice cores, have figured out that the Yucatan did indeed suffer a series of droughts that correspond to the decline of Maya power. But as impressive as the Maya were, in some ways they pale in comparison to the Khmer culture that flourished between 802 and 1327 CE in what is now Cambodia. These days, the Khmer are best known for:
1. Having their name co-opted by the Khmer Rouge and,
2. Building the temples at Angkor, most famously Angkor Wat, the largest religious building ever constructed.

Almost as impressive were the reservoirs surrounding the temple complex, especially West Baray, which is 8 km long and 2 km wide, and at one point had more than 48 million cubic meters of water in it. So the water issues in Cambodia are very different from those in Mexico but the amount of labor and care that went into dealing with them is the same. And like the use of water in Mayan complexes, the function of the barays isn't fully understood. Like, it's not clear if they were used for irrigation during the dry season or flood control during the monsoon. And it's also possible that they served a religious function. Like, Steven Mithen said that they might have been an attempt to recreate heaven on earth. The problem is, we don't know a whole lot about the people who lived at Angkor except what we can glean from a few relief carvings and a Chinese written account from the 13th century, but most of them were peasant rice farmers.

Angkor Wat was built by King Suryavarman II in the 12th century so it was a relatively late addition and it came after the construction of the West Baray a century earlier. Modern archaeological techniques, including imaging from space, have revealed that the barays and moats surrounding the temples, most of which are gone today, were linked by a series of channels. So, it was probably like a really big lazy river. But the archaeologists haven't found any inner tubes or beer cans. Yeah, we just don't know what their function was.

Bernard-Philippe Groslier, who characterized Angkor as a "hydraulic city", thought that the barays were built to catch monsoon water that would be used to irrigate rice during the dry season. And he assumed that a lot of centralized control was needed to provide for food and water for this gigantic population of around 1.9 million people, at least according to his estimate.

That sounds like a good theory but then anthropologist W. J. van Liere argued that religious considerations probably determined the layout of the barays because they weren't well situated for irrigation. But then again, maybe they were just built inefficiently because of government incompetence or corruption which is, you know, not unprecedented.

Now, as with the Maya we don't exactly know what led to the decline of the Khmer but environmental factors probably did play a role. Like, we know that monsoons weakened in the middle to late 14th century and also that droughts would sometimes alternate with intensely wet years. And although the Khmer made the hydraulics system at Angkor increasingly complex, it probably just couldn't keep up with the fluctuations.

=====Conclusion=====

But regardless of how the Khmer civilization ended, we know that humans cannot survive without water and just as it was a major concern for classical civilizations, water control remains an issue for the present and especially for the future. Today, over 1 billion people lack access to safe drinking water and, "By 2025 more than half of the world's nations will face significant shortages of fresh water." So we have good reason to believe that environmental shifts and failing water control systems led to the collapse of classical civilizations like the Maya and the Khmer, right? So, we might have good reason to be worried given our current voracious thirst and poor record of water conservation.

Now, one lesson we might draw is that it's a bad idea to build huge cities in places that don't have water... Phoenix. We've got a lot more people on earth than at any point in history and we have the exact same amount of water. But having more people also means that we have more innovators and we are getting better about technology to better use water. And, as Steven Mithen has written, "We also have knowledge about the ancient world to guide us in the present and the future: understanding the past enables us to see the present more clearly." Now, like all fans of history I'm a bit biased on that subject, but I tend to agree. And so we need to understand that history is not just about humans interacting with each other but also about the ways that humans interact with the larger world. Thanks for watching, I'll see you next week.

=====Outro=====

Crash Course is filmed here in the Chad and Stacey Emigholz Studio in Indianapolis and it's made possible by our Subbable subscribers, including our lead sponsor for today's video Mrs Booth who wants to thank Sunda, Burgoon, and the SCHS World History AP students for being awesome. And co-sponsored by Mike Burns from the Concordia School in Shanghai. I want to say a special thank you to all of our Subbable subscribers, especially the educators. And, as we say in my hometown, don't forget to be awesome.