

Water Realities of the Promised Land*John Beck, Ph.D.*

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NT110 | Lesson 09

Biblical Geography Basics

Basics Course

Water Realities of the Promised Land

Nothing is more vital to our physical life than water, so it is not surprising that water is mentioned somewhat frequently in the Bible. But the water realities of those living in the Promised Land were very different than our own. In this session, we will look at the water supply of this land, the challenges of acquiring it, and the creative solutions used to keep it accessible.

Introduction

There's geography in my Bible, and not surprisingly one of the most frequently mentioned elements of geography in the Bible is water. We know the experience. Like the ancients, we require water. It helps cool our bodies, it aids in moving nutrients around to ourselves, and it flushes waste from our systems. We simply can't get by without water.

But the water realities of the Promised Land are likely quite different than the water realities we know, and so in this session we're going to take a look at the water realities of the Promised Land. I'd like to talk about the rain-sourced water supply that ancient Israel knew, the challenges that accompanied that sort of water supply, and the very creative solutions that were used in order to make sure there was a year-round supply of water for those living in the Promised Land.

The Water Supply of Ancient Israel

Let's start by talking about the Promised Land as a place with a rain-sourced supply of water, and here I need to introduce you to a term that may be new to you, *hydrology*. Hydrology is the study of the earth's water systems and how the human need for water is met. The word *hydrology* doesn't appear in our Bible, but the idea is there, particularly in Deuteronomy 11. Here the Lord is talking to the children of Israel about the water realities that they've come from versus the water realities they're heading for, the difference between Egypt and the Promised Land.

Deuteronomy 11:10: "The land you're entering to take over is not like the land Egypt, from which you've come, where you planted your seed and irrigated it by foot as in a vegetable garden." The Lord was getting the Israelites ready for the Promised Land, but

The Water Supply of Ancient Israel

Hydrology

The study of the earth's water systems and how the human need for water is met.

Deuteronomy 11:10-11

The Water Supply of Ancient Israel

Egypt's River-Based Hydrology

“Egypt is
the gift of
the Nile.”

Herodotus, *Histories*

The Water Supply of Ancient Israel

Egypt's River-Based Hydrology

*Very durable ecosystem that utilizes irrigation and
doesn't rely on local rain*



Water Acquisition Challenges

the only water reality they had known was that of Egypt.

In the fifth century BC, the historian Herodotus said, “Egypt is the gift of the Nile,” and couple that fifth-century BC statement with a modern satellite image, and you can see the reality of what Herodotus was talking about. Most of Egypt is barren and dry-looking except for that place where the Nile River flows into the Nile Delta. Only about 5 percent of ancient Egypt is capable of producing food and, therefore, sustaining life. And even though it doesn’t rain much, even where we see green, as long as it’s raining in Central Africa those life-giving rains are brought by the Nile into the Nile River Valley and into the Nile Delta, allowing life to sustain. And actually at the same time creating one of the most durable ecosystems of the ancient world. That’s all Israel had known.

Back to Deuteronomy 11, the Lord says, “But the land you’re crossing the Jordan to take possession of is a land of mountains and valleys”—and watch this—“drinks rain from heaven.” The river-based hydrology that the Israelites had known in Egypt would give way to the rain-based hydrology they would know in the Promised Land.

Now, I know when you look at a map of the Promised Land, you see lots of blue in streams and lakes and rivers. And you might think, *Well, you certainly could irrigate farm fields using all of that water.* But here’s the reality. Most of the streams that you see depicted on those maps are seasonal, and the rivers and the lakes, they’re either too low in elevation to benefit farm fields or too tainted by salt to be of any value to them. If you are going to grow a grain crop in Israel, you need it to rain. It’s the rain that recharges the ground water. It fills the water systems, it greens the pastures, and it matures the field crops. And that makes the sound of flowing water one of the happiest sounds known to Bible culture and Bible times. Israel had a rain-sourced supply of water.

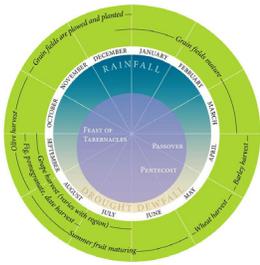
Water Acquisition Challenges

And that creates some challenges—challenges that make it a very different place than Egypt, where you have this very durable ecosystem fed by river water. I’d like to talk about a few of those challenges.

Number one, rainfall that provides life to the land, rainfall is

Water Acquisition Challenges

Rainfall is limited by season.



Water Acquisition Challenges

Rainfall is limited by region.

75% of rainfall occurs in 25% of the land

limited by season. Take a look at the bottom of this chart and you'll see the word *drought*. From about mid-April through mid-September, rainfall in the Promised Land virtually ceases in those five months. Rainfall is not only limited by season, but it's also limited by region. About 75 percent of Israel's modern rainfall occurs in just 25 percent of the land. Again, a map will help tell the story. You can see that in the northern portions of Israel you have significantly more rain than you do as you move farther south. And if you look at the map on the western side near the Mediterranean Sea, you'll find more rainfall on the west side of the mountains than is received on the eastern side of the mountains. Rainfall is not only limited by season; it's also limited by region.

Realized rainfall, furthermore, is limited by runoff and evaporation. Only about 25 percent of the rainfall actually survives evaporation and runoff to benefit the farm fields and the pastures and the water systems that are created.

Now, the Judean wilderness is among the worst of them. The very steep-sided slopes that you see here are covered with a marrow-like substance that prevents water from being absorbed by the soil, and the water simply runs off when it does rain, creating the sort of flash floods like you see pictured in this image that are still part of the challenge of moving along the west side of the Dead Sea during the time of year when it rains heavily there.

Rainfall is not only limited by runoff and evaporation; rainfall can cease for years at a time. Years of famine run through the cords of the history of the Promised Land, and decade after decade after decade witnesses at least one famine that dries up water storage systems that causes the field crops to suffer and the pastures the livestock need to suffer as well. And it causes people who are living in this land that is so rain dependent to migrate to a place like Egypt, where a river-based water system allows life to continue.

Water Acquisition Challenges

Realized rainfall is limited by runoff and evaporation.



Only 25% of rainfall benefits fields, pastures, and water systems.

Solutions

This is the daunting set of challenges faced by anyone living in ancient Israel. Rainfall is limited by season. It's limited by region. It's limited by runoff and evaporation. It can cease for years at a time. If you're going to sustain in the Promised Land, you had to come up with some creative ways of defeating these challenges, and that's where our attention now turns to water sources that people developed.

Water Acquisition Challenges

Rainfall can cease for years at a time.



Solutions



Here you see five of them that are the most common. People would access water when it wasn't raining in a spring, in a well, in a cistern, aqueduct, a tunnel. All of these creative solutions are represented in Scripture. Let's talk a little about each, starting with a spring. The spring, like this one, occurs where the water table intersects the surface of the earth. By far and away, this is the most desirable of the water systems. Advantages include the fact that it offers filtered water with a minimum amount of energy needed to develop the resource. The biggest disadvantage is you can't choose the location of the spring. You simply have to accept it where it is and that may mean traveling miles in order to get to your water source.

Alternatively, people might use a well as their source of water. This is different than a spring. The well shaft is excavated to the level of the ground water, but this involves creating a vertical chamber, approximately 6 foot wide, that needs to be dug either a few or hundreds of feet, depending on the depth of the water table. The shaft is then lined with field stones and capped with a device like this to prevent evaporation and contamination. The advantages of this resource? Well, it still offers filtered water and it offers more options in terms of creating a source near where you live. The disadvantage is in the extra work involved. It's a lot of work to dig a well, and, of course, the reality is that labor isn't always rewarded because you might find yourself excavating to a point and not finding any water at all. If you're fortunate enough to find water, then your job isn't done because from season to season maintenance is required to make sure that that shaft remains in good shape.

A third source, a third alternative for getting water, is the cistern. You can see that it looks very much like a well on the surface, but it functions very different. Where a well is excavated down to the water table, a cistern is simply an underground chamber created to capture runoff water. The advantage of this sort of system is that you have more options in terms of creating its location, although you always want to locate it at a low point where the surface water is running off towards the chamber. But the disadvantages abound with a cistern. It's not filtered water, so its purity suffers. You're required to do more excavation to build a cistern typically than you would a well, and there's a lot of maintenance involved, because every year you have to go into the cistern and re-plaster the walls to make sure that its water-resistant integrity is maintained.

Solutions

Spring

ADVANTAGES

- + Naturally filtered water
- + Easy to develop
- + Easy to maintain

DISADVANTAGES

- Can't choose location



Solutions

Well



If you have a strong central government, you can move into two other resources. But mind you, these are not available for manufacture by the average citizen in the Promised Land. If you have strong government and, therefore, strong economic resources, you can construct mechanisms that transport water from its source to where you're living. Here you see an example of an aqueduct, a raised water canal that travels 13 miles from Mount Carmel to Caesarea Maritima.

Here's another alternative. In this case you have King Hezekiah, who at the end of the eighth century dug a tunnel between the Kidron and Central Valley in Jerusalem in order to bring water from the spring outside his fortified city to a reservoir within his city. In both cases, with a raised aqueduct or with an excavated tunnel like this, you have to have very strong central government to make sure that you can develop and maintain it. Of course, the big advantage is you can pretty much put the water wherever you would want it.

These are the water sources that the average person living in ancient Israel would have used to get their daily water supply—the spring, the well, the cistern, the aqueduct, the tunnel. And because they're so much a part of the fabric of everyday life, it's not surprising when they turn up in Scripture, either as something that's described as a part of someone's life or as a metaphor.

Solutions

Well

ADVANTAGES

- + Naturally filtered water
- + Some location options

DISADVANTAGES

- Difficult to develop
- Some seasonal maintenance required
- Location not guaranteed



Conclusion

One more reality that we need to make sure that you connect with: The residents of this land dedicated significant time and attention to the identification, development, maintenance, and defense of a fresh water resource which preserved the winter rains for summer use. Think about that sentence for a moment. When I need a drink of water, I go to the tap, and with maybe too little thought, simply get myself a glass of water. I don't think a lot during the week about my water supply. People in Bible times thought about their water supply all the time, and it's that reality that creates the image of water as something so precious that it's likened to the very gospel message itself.

In this session we've talked about three different water realities in the Promised Land. Remember, in ancient Israel we have a rain-sourced water supply—different than Egypt, different than Mesopotamia. That creates some very dramatic challenges, and

it led to some very creative solutions. There's a bigger story, of course, behind this rain-supply, and it has to do with the weather patterns that are part of the Promised Land. In our next session, in our final session, we'll have the opportunity to talk about the weather patterns that bring this precious rainfall into the Promised Land.