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The Narrow Strip of Wilderness

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The Book of Mormon makes a single reference to the narrow strip of wilderness [Alma 22:27](#) but this natural feature on the Nephite/Lamanite landscape looms large in any attempt to correlate the text with the modern map. Actually, there are other references to the narrow strip of wilderness, but under different names. For example:

- [Alma 22:29](#) calls it the wilderness at the head of the river Sidon
- [Alma 27:14](#) calls it the wilderness which divided the land of Nephi from the land of Zarahemla
- [Alma 50:11](#) calls it the line between the Nephites and the Lamanites, as well as (the line) between the land of Zarahemla and the land of Nephi
- [Alma 50:13](#) calls it the line of the possessions of the Lamanites
- The narrow strip of wilderness was the southern boundary of the greater land of Zarahemla so it is the mountainous barrier people crossed over in [Alma 25:2](#) and [Alma 27:14](#).

Detailed analyses of these texts yields 32 criteria that will help us identify the narrow strip of wilderness on modern maps. These requirements are enumerated [1- 32](#) below in [aqua](#).

The narrow strip of wilderness was the northern boundary [1](#) of the greater land of Nephi. This land of Nephi border was relatively straight [2](#), particularly along its eastern section [Alma 50:8](#). The land of Nephi was continental in scope, running from the east sea [Alma 50:8](#) to the west sea [3 Alma 50:11](#) which is precisely the sense of [Alma 22:27](#) when it says that the land of Nephi ran even to the sea on the east and on the west. The narrow strip of wilderness itself was oriented east west [4](#) and ran from the sea east even to the sea west [5 Alma 22:27](#). North of the narrow strip of wilderness lay the greater land of Zarahemla. Early in its history (ca. 90 B.C.), this greater Zarahemla was confined to the central Sidon corridor and environs and did not yet reach the east sea [6](#). The east coast was filled with Lamanites [Alma 22:29](#) who had been driven eastward by the expansion of Nephite settlements moving their direction See the blog article "[Expansion of the Nephite Nation](#)." The Nephites finally reached the east sea ca. 72 B.C. when they founded the city of Moroni [Alma 50:13](#).

Note 1. In terms of geographic content, Alma 22 and Alma 50 are parallel texts describing the Nephite geo-political situation from Mormon's point of view in 2 axial periods: ca. 90 B.C. (when the 4 sons of Mosiah were beginning their missionary labors among the Lamanites at the beginning of the reign of the judges) and ca. 72 B.C. (when Captain Moroni was expanding the size of the Nephite nation toward its territorial maximum just before the Nephite golden age [Alma 50:23](#)) respectively.

In the earlier period (ca. 90 B.C.) the greater land of Zarahemla did not yet extend to the west coast either. Lamanites lived on the coast west of Zarahemla [Alma 22:28](#). Emboldened by Captain Moroni's strategic innovation, fortified cities, the Nephites only began a westward push ca. 72 B.C. [Alma 50:11](#) and by ca. 66 B.C. we see the first mention in the text [Alma 52:11](#) of Nephite settlement along the west coast of greater Zarahemla. Nephites had earlier established a defensive outpost at a strategic location along the west coast, but it was in the land Bountiful [Alma 22:33](#) just southward from the land Desolation. See the final map in the article "[The Narrow Pass and Narrow Passage](#)" for our correlation of the east west Bountiful/Desolation line in context with 14 other Nephite geographic features clustered near each other in the Municipio of Tonalá, Chiapas. So, it is clear why Mormon said the Nephites, ca. 90 B.C., were nearly surrounded by Lamanites [Alma 22:29](#). They had Lamanites on the east coast, the west coast, and south of the narrow strip of wilderness. Eventually the Nephite domain, like the Lamanites before them, extended from sea to sea [7 Helaman 11:20](#).

The narrow strip of wilderness had some circularity to it near the west coast [8 Alma 22:27](#). This is the sense of the phrase "round about on the borders of the seashore." Additional wilderness lay north of the narrow strip of wilderness and south of the then (ca. 90 B.C.) inhabited portions of the greater land of Zarahemla [9 Alma 22:27](#). Keep in mind that ca. 90 B.C. the Nephites had begun settling eastward from the central Sidon corridor but had not yet established settlements in their west. See the articles "[Ammonihah Noah & Sidom all East of Sidon](#)" and "[Sidon East then West](#)." Continuing further west, the narrow strip of wilderness passed by the southern border of the land of Manti [10](#) and then passed by the head of the river Sidon [11 Alma 22:27](#).

Note 2. In order to understand Mormon's thought process in [Alma 22:27](#) it is important to keep in mind that he passes three times from east to west. The first pass describes the land belonging to the King of the Lamanites which stretched from the sea on the east to the (sea) on the west. The second pass describes the narrow strip of wilderness boundary

that separated the greater land of Zarahemla on the north from the greater land of Nephi on the south. The narrow strip of wilderness also ran from the sea east even to the sea west with some circular (round about) irregularity near the west coast. The third pass follows the narrow strip of wilderness again (running from the east towards the west), filling in some details (of only the eastern half) along the way. As you move west along the narrow strip of wilderness, you come first to wilderness south of the greater land of Zarahemla, second to the southern boundary of the land of Manti (which was east of Sidon - see the blog article entitled "[Manti](#)"), and third to the head of Sidon. The Sidon ran generally from south to north [12](#) (See the article "[Sidon South to North](#)") through the center [13](#) [Helaman 1:24-27](#) or heart [Helaman 1:18](#) of Nephite lands. In the parallel passage [Alma 50:11](#), Mormon indicates a Nephite geo-political shift through a textual shift. The geo-political shift was that the Nephites had fulfilled their manifest destiny in the east and their strategic focus was now on the west and beyond into the land northward. The textual shift is that every reference prior to [Alma 50:11](#) mentions the east before the west (As [Alma 22:27](#) does 3 times). [Alma 50:11](#) starts out in the east (east wilderness) and then mentions that the Nephite military under Captain Moroni forcibly ejected the Lamanites from Nephite lands in the west. From that point on in the Book of Mormon, all east west couplets mention the west before the east. Mormon describes the narrow strip of wilderness line beginning at the west sea and running eastward by the head of the river Sidon. And what do we find in that western half of the narrow strip of wilderness boundary? Nephite control north of the line (after ca. 72 B.C.), the land Bountiful (by the west sea) [14](#) [Alma 63:5](#) and the land northward beyond Bountiful [15](#) [Alma 22:33](#)..

The head of the river Sidon deserves some analysis of its own. The relevant scriptural passages are [Alma 22:27](#), [Alma 22:29](#), [Alma 43:22](#), [Alma 50:11](#), and [Alma 56:25](#). The foregoing has shown that the head of Sidon was on the extreme southern boundary of Nephite territory [16](#) a considerable distance inland from both the east sea [17](#) [starting at the east sea, you come to wilderness (The Nephites had not yet settled Moroni nor Nephiah ca. 90 B.C.) and then the land of Manti before you get to the head of Sidon [Alma 22:27](#)] and the west sea [18](#) [we learn from Helaman's epistle to Captain Moroni that Judea (near the west coast), Antiparah, Cumeni and Zeezrom [Alma 56:14-15](#) all lay west of the head of Sidon which was immediately south of Manti]. This confirms that the upstream head of Sidon and the downstream local land of Zarahemla were both roughly in the center of Nephite lands. There was a logical route [19](#) for the Lamanites under Zerahemnah to travel from the land of Antionum near Jershon (near the east sea [Alma](#)

[27:22](#), [Alma 31:3](#)) in a south westerly arc through the wilderness [see the article "[A Note About Wilderness](#)" for perspective - wilderness meant absence of Nephite (or Lamanite as the case may be) political control, not absence of human beings] and then passing by the head of Sidon before attempting an unsuccessful invasion of Manti [Alma 43:22](#). This wilderness south and west of Antionum (ca. 74 B.C.) is probably the same wilderness Mormon was describing in [Alma 22:27](#) that lay east of Manti and north of the narrow strip of wilderness (ca. 90 B.C.). This was clearly part of the big east wilderness (east relative to the local land of Zarahemla and the central Sidon corridor) that Captain Moroni cleared [Alma 50:11](#) before founding Moroni [Alma 50:13](#) and Nephiah [Alma 50:14](#) ca. 72 B.C. By coming into the land of Manti from the south near the head of Sidon, rather than a more direct route simply entering from the east, the Lamanites under Zerahemnah hoped to achieve an element of surprise [20 Alma 43:22](#). Coming in from a generally north easterly direction, it was possible to pass by the head of Sidon without crossing over it [21 Alma 43:22](#). One could then cross Sidon itself from east to west further downstream [22 Alma 43:35](#). Coming from the west one would cross over [23](#) the head of Sidon en route to Nephiah [Alma 56:25](#). A persistent thread of Book of Mormon geographical exegesis interprets the phrase "running from the east towards the west" in [Alma 22:27](#) to mean that the river Sidon itself flowed in a westerly direction at this point in its course. I (Kirk Magleby) do not read the text that way. I believe Mormon was referring to the narrow strip of wilderness rather than the river. Nevertheless, in deference to this alternate viewpoint, we will consider that the river Sidon may have flowed from east to west [24](#) in the immediate vicinity of the head of Sidon before turning generally northward past the local lands of Manti, Melek, Minon, Zarahemla and Gideon.

What is the head of a river? [1 Nephi 8:17](#) is not a great deal of help. The head of a river is clearly upstream from one's point of view along the main channel. Is it the headwaters like Lake Itasca spawning the Mississippi? the tributary furthest from the mouth like Mount Mismi in Arequipa Province, Peru 6,800 kilometers from the Amazon's mouth in the Atlantic? Not necessarily. [Genesis 2:10](#) (repeated in [Moses 3:10](#) and [Abraham 5:10](#)) describes the head of a river as the origin point of distributaries, each of whom is a river in its own right. Consulting the Oxford English Dictionary, we find that the head of a river can be a) the point at which a stream either enters or exits a lake, b) the highland source of a stream, or c) the confluence point where two tributaries join to form a new river. The area around Three Rivers Stadium in Pittsburgh, for example, is often referred to as the head of the Ohio because the Allegheny coming in from the north joins the Monongahela coming in from the south at that point. So, the geographic feature we call

the head of the river Sidon must meet one of these commonly accepted definitions ²⁵ for a "head" of a river.

Turning our attention again to the narrow strip of wilderness boundary, the area was large enough to accommodate the people of Ammon (Anti Nephi Lehi's) ²⁶ while they waited word from the Nephites about a new homeland [Alma 27:14-15](#). On the other hand, it was small enough to justify the adjective "narrow" ²⁷ (See the article "[Narrow and Small Things](#)"). The dictionary definition of a "strip" is something much longer than it is wide. The most famous strip of land in U.S. History was the Cherokee Strip (not to be confused with the much wider Cherokee Outlet). It had a 3.96-kilometer-wide section in the modern state of Kansas and a 3.2-kilometer-wide section in what is now Oklahoma between the 96th and 100th meridians of longitude. The Cherokee strip was approximately 362 kilometers long and 7 kilometers wide. So, our narrow strip of wilderness should conform to commonly held notions of what constitutes a "strip" of land ²⁸.

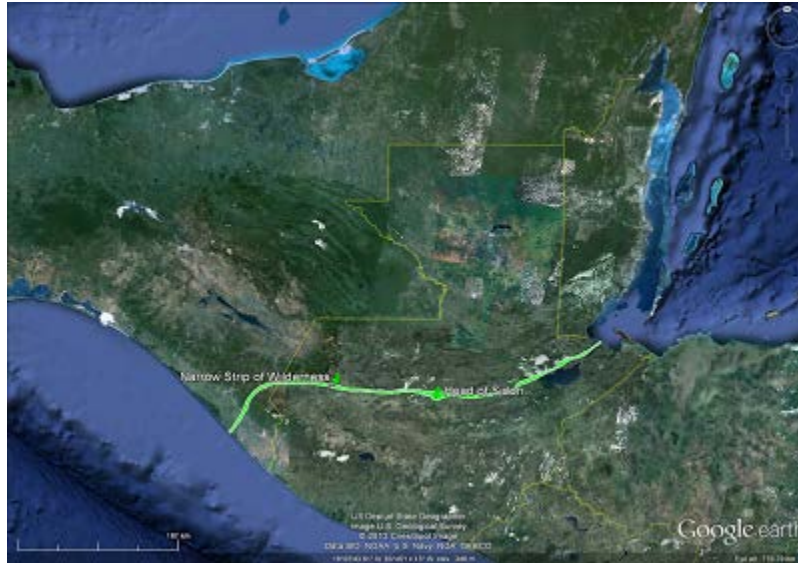
From a continental perspective, the narrow strip of wilderness was small enough to be considered a "line" ²⁹ [Alma 50:11](#), [Alma 50 13](#).

The narrow strip of wilderness had properties that made it a natural line of defense ³⁰ for the Nephites who placed fortifications at key points along its northern edge [Alma 50:10-11](#).

The narrow strip of wilderness was the principal boundary between the Nephites and Lamanites [Alma 22:27](#), [Alma 50:11](#), groups who differed politically, ethnically and religiously, but who shared a very similar material culture. We would expect to find evidence of this littoral function ³¹ along our boundary line in the archaeological literature.

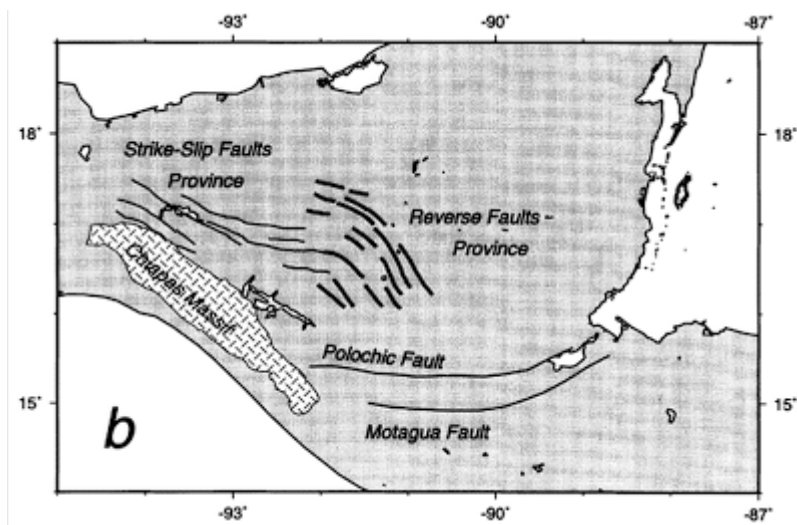
The narrow strip of wilderness should exhibit characteristics of wilderness ³² (human occupation on a modest scale) throughout most of its extent.

Our candidate for the narrow strip of wilderness is the boundary between the North American and the Caribbean tectonic plates that runs from the Caribbean just north of Livingston, Izabal, Guatemala to the Pacific near Huixtla, Chiapas, Mexico.



Boundary of North American and Caribbean Tectonic Plates

This striking natural feature, visible from space, is a long string of cliffs with many streams flowing east west at their base. Over much of its length, it is known as the Polochic fault, named after the eastward flowing Polochic River that empties into Lake Izabal. Here is a perspective from 2 geologists: M. Guzman-Speziale & J.J. Meneses-Rocha.



East West Polochic Fault

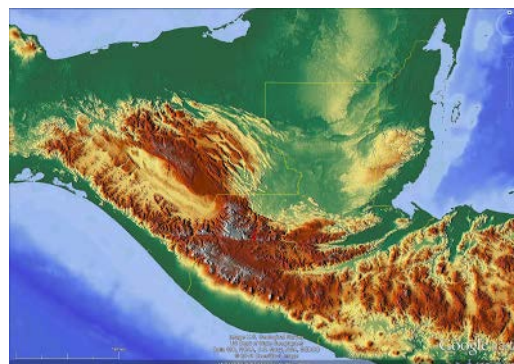
And this is what the plate boundary looks like in the celebrated Blue Marble imagery from [NASA](#), marked with a small red arrow. This image is from the month of October, the height of the rainy season. As with all images on this blog, click to enlarge.



North American Caribbean Tectonic Plate Boundary

Shown in NASA Blue Marble Imagery (October)

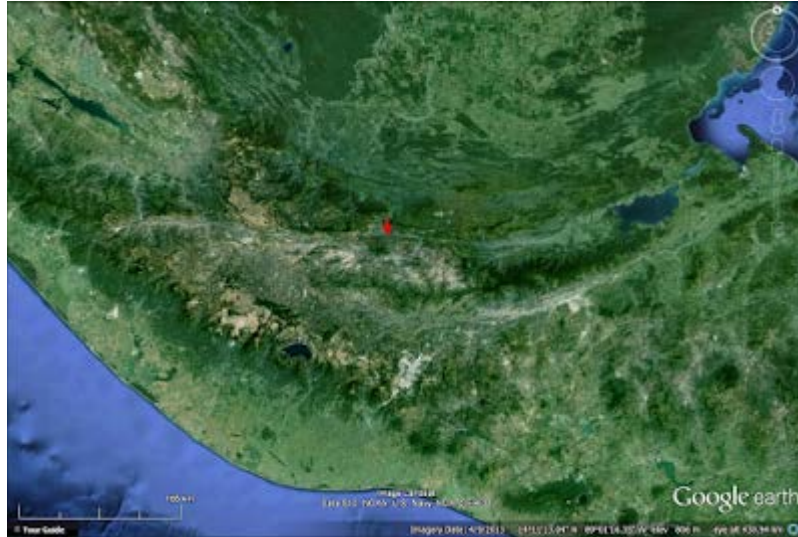
Another image shows our narrow strip of wilderness, marked with a small red arrow, on a shaded relief map. Notice how clearly the circularity shows up as the North American Caribbean Tectonic Plate Boundary goes through a major mountain pass in the Sierra Madre and then down to the Pacific coast. This is the area between Motozintla and Huixtla, Chiapas where Mexican Federal Highway 211 runs today.



North American Caribbean Tectonic Plate Boundary

Shown on Shaded Relief Map

Google Earth satellite imagery has improved to the point that our proposed narrow strip of wilderness now shows up very clearly on the base map. In this image, the small red arrow marks the tectonic plate boundary.



Tectonic Plate Boundary on Google Earth Base Map

And, a final image shows the northern edge of our narrow strip of wilderness in white with a map of major rivers. The Usumacinta network is in red. The Mezcalapa-Grijalva system is in blue. All other drainage basins are in yellow.



Proposed Narrow Strip of Wilderness with Major River Systems

Clicking to enlarge this image, you will notice a nearly unbroken string of rivers (Lake Izabal is part of the Polochic drainage system) immediately south of the white line. These rivers flow at the base of the long line of cliffs we correlate with the narrow strip of wilderness.

Assessing our candidate for the narrow strip of wilderness in light of our 32 textual requirements, these are our results.

1 2 3 4 5. This map shows our proposed narrow strip of wilderness in green with the greater land of Nephi immediately south of it in white overlay.



Proposed Narrow Strip of Wilderness in Green
with Greater Land of Nephi in White Overlay

Our narrow strip of wilderness is the northern boundary of the greater land of Nephi. The northern boundary of the greater land of Nephi runs in a relatively straight line along its eastern section. See the 135-kilometer-long black line in the image above that runs from the Caribbean to the confluence of the Samilja with the Polochic. Our proposed land of Nephi does run from the Caribbean to the Pacific, from the sea east to the sea west. Our correlation of the narrow strip of wilderness is oriented east-west. The ruler in the image above is on a heading of 263.23 degrees. 270 degrees would be due west. And, our narrow strip of wilderness does run from the sea east to the sea west. Criteria 1 - 5 satisfied.

6. This map shows what we believe the Nephite nation looked like ca. 90 B.C., the time period Mormon was describing in his geographical essay in Alma 22. For background,

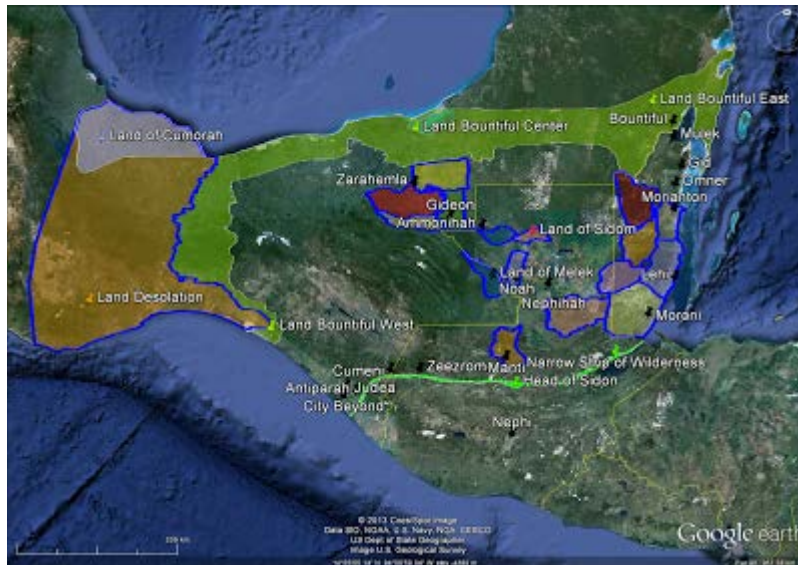
see the articles "[Expansion of the Nephite Nation](#)" and "[The Church in Zarahemla](#)." The river in red represents the Sidon (Chixoy - Salinas - Usumacinta) with two of its principal tributaries, the San Pedro coming in from the east and the Lacantun coming in from the west.



One Interpretation of Nephite & Lamanite Lands ca. 90 B.C.

The 2 white circles and 2 white ellipsoids represent Nephite settlements. Notice the incipient eastward expansion out from the culture core along the San Pedro River. The white circles represent defensive outposts. The areas enclosed in black represent Lamanite or other non-Nephite territory. The yellow areas, the Chontalpa in Tabasco and the Mirador Basin in the Peten were probably never under Nephite control at any time. The two small black circles represent Piedras Negras to the north and the Altar de Sacrificios/Dos Pilas area to the south at the confluence of the Pasion (not shown) with the Salinas that forms the Usumacinta. Except for the defensive outpost in the land Bountiful on the west sea, the Nephites at this time had settled primarily along the central Sidon corridor. The green line represents the narrow strip of wilderness with the greater land of Nephi shown in white overlay south of it. Lamanites inhabited large areas both east and west of the central Sidon corridor. This is the sense of Mormon's comments that the Nephites were nearly surrounded by Lamanites [Alma 22:29](#) and had taken possession of the central Sidon corridor from the narrow strip of wilderness on the south to the land Bountiful on the north. According to this vision, the Nephites ca. 90 B.C. had not yet reached the east coast, although they were moving in that direction, pushing the Lamanites before them. Criterion 6 satisfied.

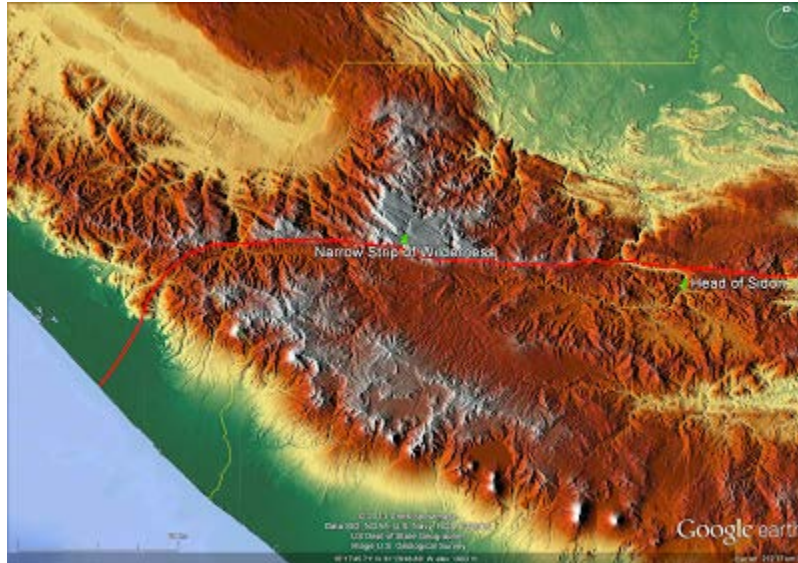
7. This map shows our correlation of Nephite lands and cities as they existed ca. 57 B.C. when battle-wounded Captain Moroni retired to his home in the city of Zarahemla [Alma 62:42-43](#).



Proposed Nephite Lands & Cities ca. 57 B.C.

If our correlation is correct, The Nephites by the end of Captain Moroni's career had planted settlements on both coasts and the Nephite nation did extend from the sea east to the sea west. Criterion 7 satisfied.

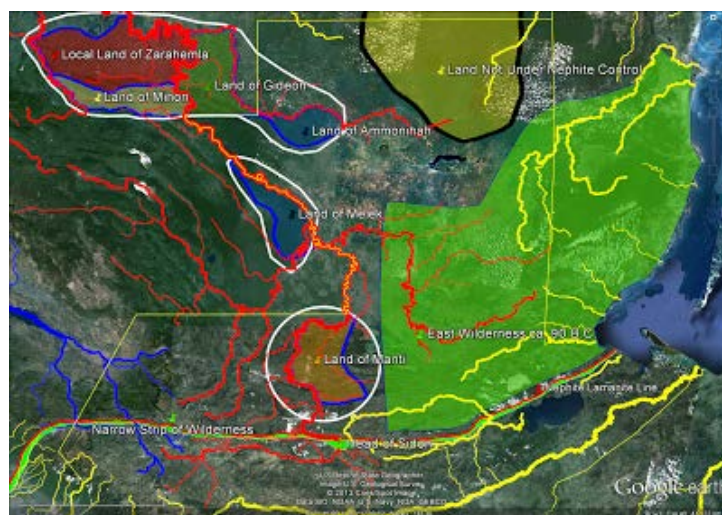
8. The North American Caribbean tectonic plate boundary has been a subduction zone during much of geologic time. That is the reason for the long string of cliffs that create a distinct line on the landscape visible from space. That line runs generally east to west from the Rio Dulce (Livingston) on the Guatemalan Caribbean coast to the Guatemala Mexico border at Amatenango de la Frontera, Chiapas. This is the place where the large Cuilco river changes from a westerly to a northerly direction of flow. From that point to Motozintla, Chiapas and then down to the city of Huixtla, Chiapas, the tectonic plate boundary bends southward in a wide (approx. 30 kilometer radius) arc. This is the circularity we believe Mormon had in mind when he described the narrow strip of wilderness running "round about on the borders of the seashore" [Alma 22:27](#).



Proposed Narrow Strip of Wilderness Running
Round About through the Sierra Madre

The red line on the map above shows the northern edge of our proposed narrow strip of wilderness curving southward on its westward extent through the Sierra Madre mountains along the Pacific coast of Chiapas. Our correlation for the narrow strip of wilderness does run "round about" as it approaches the sea west. Criterion 8 satisfied.

9 10 11. Beginning at the east coast, the narrow strip of wilderness ca. 90 B.C. passed 3 geographic features as it ran westward toward the center of Nephite lands.



Focus on Our Correlation of Eastern Nephite Lands ca. 90 B.C.

First, the narrow strip of wilderness passed south of wilderness inhabited by idle Lamanites. The white lines enclose territory we believe was settled by Nephites ca. 90 B.C. The black line encloses territory (the Mirador Basin) we don't think was ever part of the Nephite nation. The green polygon represents our view of the large east wilderness prior to the establishment of the lands of Sidom, Noah or Jershon (or the city of Aaron). Those were the first places settled by the Nephites east of the central Sidon corridor.

Second, the white circle encloses our candidate for the land of Manti. After passing by wilderness, the narrow strip of wilderness ran south of the land of Manti.

Third, a green push pin shows the location of our candidate for the head of Sidon.

In our correlation, the narrow strip of wilderness does pass by wilderness, Manti and then the head of Sidon as it runs from east to west. Criteria 9, 10 & 11 satisfied.

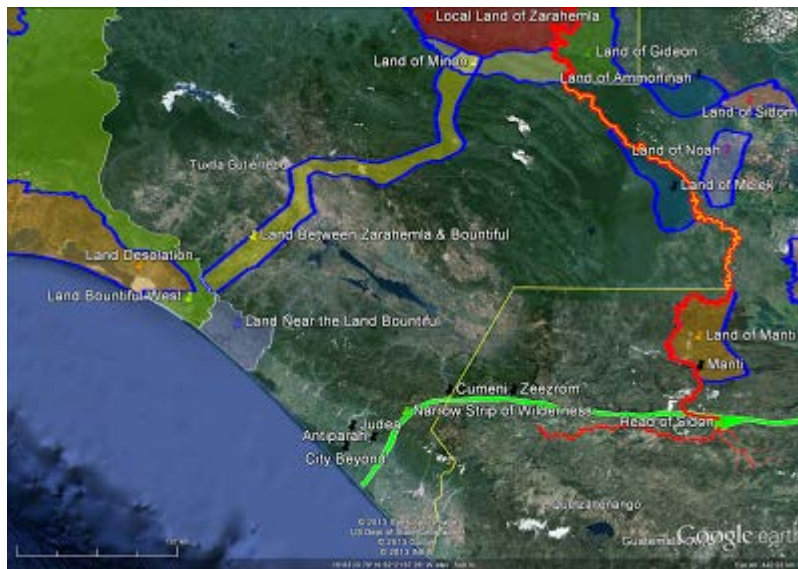
12 13. From the head of Sidon, the big river flowed generally northward through the center or heart of Nephite lands in the land southward. Our candidate for the head of Sidon is the quadruple confluence of the Chixoy-Negro with the Salama, Carchela, and Santa Gertrudis that we in the Book of Mormon Google Earth Model (see the article "[Book of Mormon Model](#)") call Tributary Chixoy E.



Proposed Sidon (Usamacinta) Running Northward through the Center or Heart of Nephite Lands

The ruler on the map above shows a heading of 328.02 degrees where 360 would be due north, 270 would be due west and 315 would be due northwest. So, beginning at our head of Sidon where the Departments of Alta Verapaz, Baja Verapaz and Quiche come together and ending at the mouth of the Usumacinta near Frontera, Tabasco, our proposed Sidon does run in a northerly direction through the central part of Nephite territories in the land southward. Criteria 12 & 13 satisfied.

14 15. Focusing on the western half of the narrow strip of wilderness, we find that our model precisely conforms to the Nephite text. After Captain Moroni cleared the Lamanites from the west wilderness [Alma 50:11](#) ca. 72 B.C., Nephite settlements (such as Judea) were founded in the greater land of Zarahemla along the west coast. Moving further northward, we find the land Bountiful also on the west coast and even further northward the land Desolation. The Bountiful/Desolation line was the boundary between the land southward and the land northward.



Focus on our Correlation of Western Nephite Lands ca. 72 B.C.

Criteria 14 & 15 satisfied

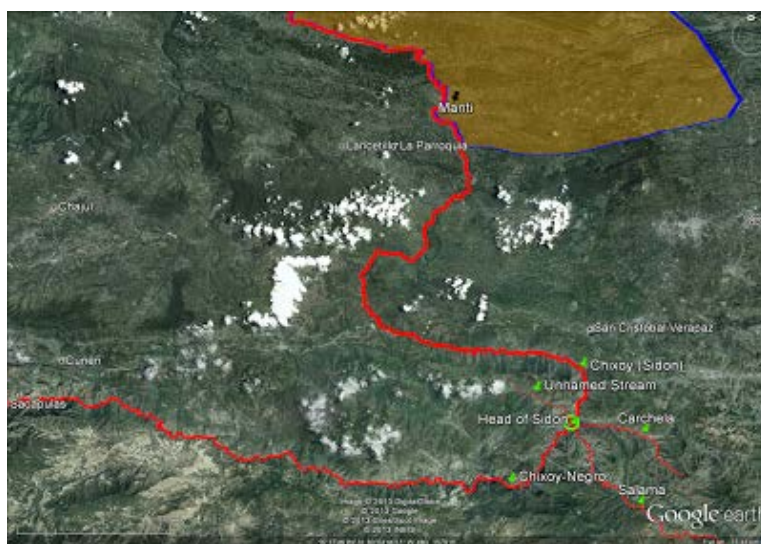
16 17 18. Geographers identify the confluence of the Chixoy-Negro with the Salama as the point where the Chixoy river begins. The Chixoy becomes the Salinas at the Guatemala Mexico border and then the Usumacinta at the Pasion confluence. This area today is a reservoir backed up behind Chixoy Dam, the largest hydroelectric installation in Guatemala. The green circle has a radius of .75 kilometers. In that compact space, 4

streams come together to form the mighty Chixoy. V. Garth Norman in the 1960's identified this point as the head of Sidon. All the work we have done in recent years substantiates Garth's correlation.



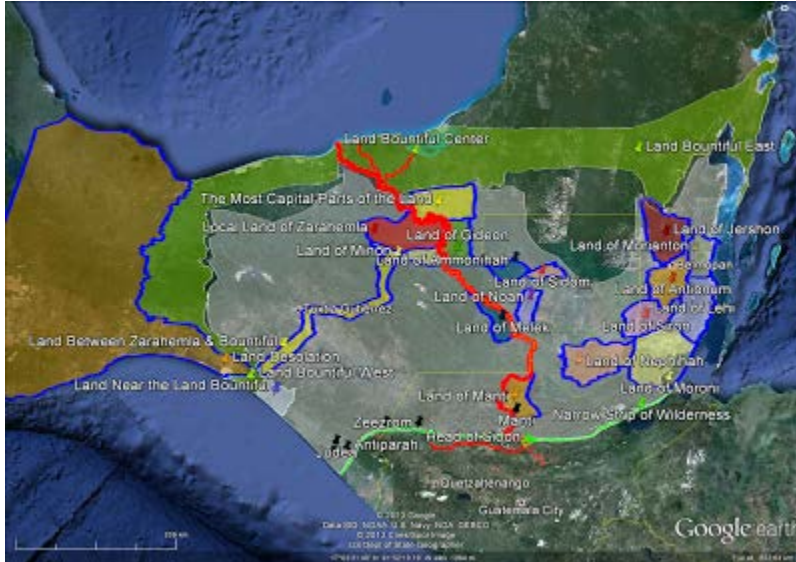
Confluence of the Chixoy-Negro, Salama, Carchela and Santa Gertrudis to Form the Chixoy

Zooming out, we see that our proposed head of Sidon is the place where the Chixoy system ends its eastward direction of flow, reverses course and runs westward for 26 kilometers, and then begins to flow generally northward.



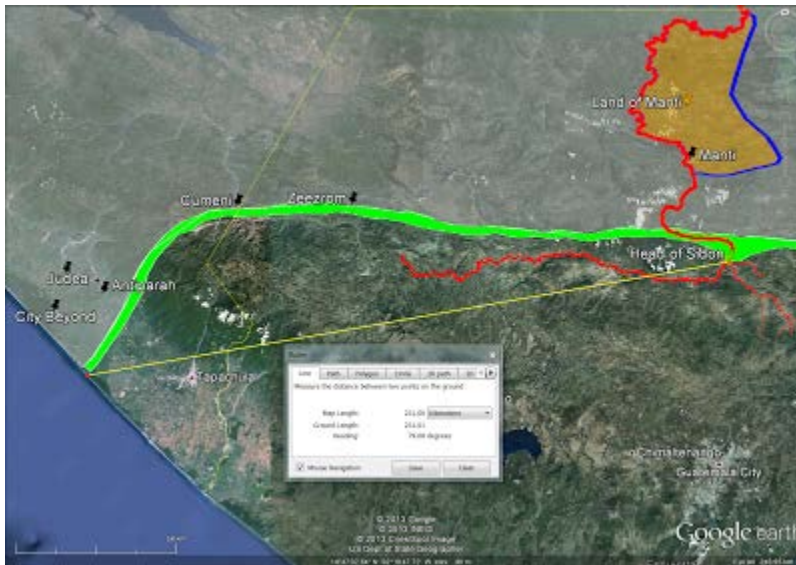
Chixoy River System Flowing East, then West, and Finally North

Zooming out still further to a continental scale, we see that our proposed head of Sidon is on the extreme southern edge of our greater land of Zarahemla, represented in white overlay on the map below.



Proposed Greater Land of Zarahemla in White
North of the Head of Sidon

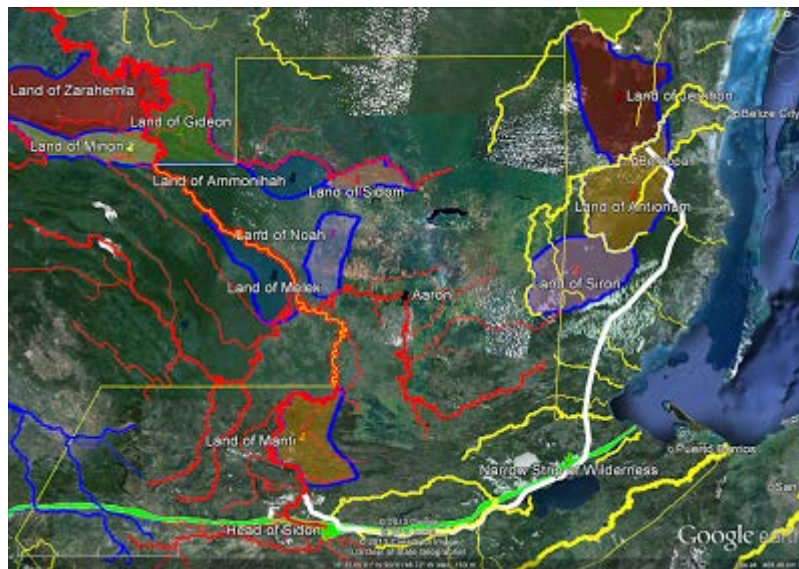
Putting a ruler on the map, we compute the straight line distance from our head of Sidon to both coasts.



Air Distance from the Pacific to the Head of the Chixoy

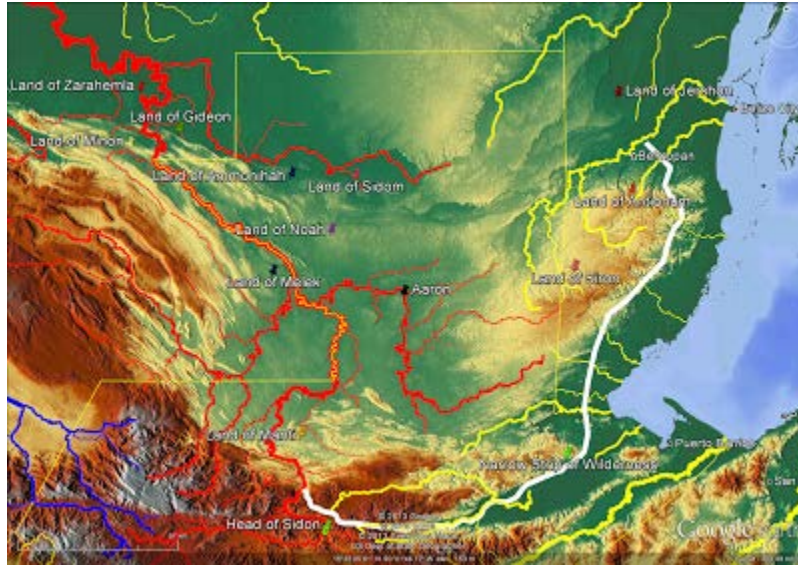
The results: Pacific Ocean to the head of the Chixoy = 231 kilometers. Caribbean Ocean to the head of the Chixoy = 196 kilometers. Our candidate for the head of Sidon is a considerable distance inland from both coasts. Criteria 16, 17 & 18 satisfied.

19. The logical route for Zerahemnah ca. 74 B.C. from our correlation of the Jerushon Antionum border (Belize River) to the head of Sidon south of Manti would be down the Caribbean coastal plain of Belize and up the Polochic. This route is shown in white on the map below.



Proposed Route for Zerahemnah Marching from the Jerushon Antionum Border to the Head of Sidon

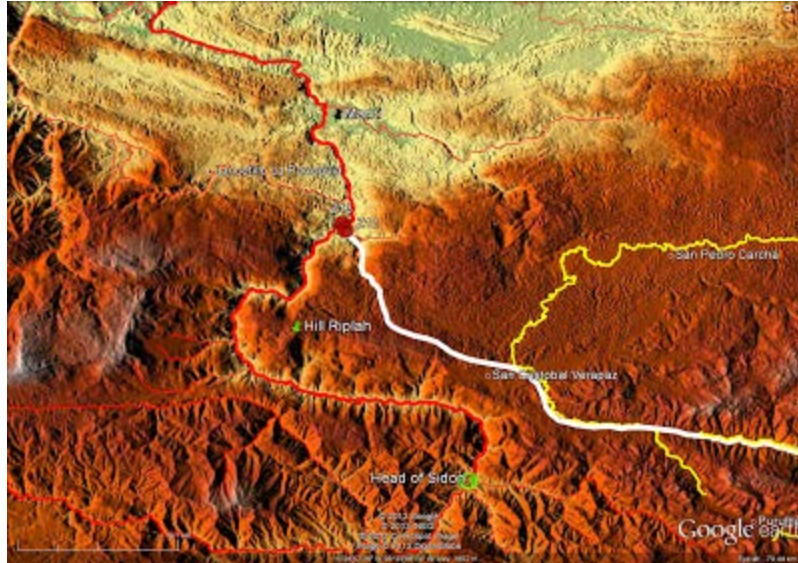
Replacing the default Google Earth base map with shaded relief shows why this route makes sense - it skirts around the rugged Maya Mountains.



Proposed Zarahemnah Route with Shaded Relief

There is a logical route Zarahemnah could have traveled from our proposed land of Antionum to the head of Sidon. This route does go "round about in the wilderness away by the head of the river Sidon" [Alma 43:22](#) as the text requires. Criterion 19 satisfied.

20. We correlate the city of Manti with the site of Chama, a large trading center at the confluence of the Chixoy with the Sachichaj. See the blog article "[Manti](#)." On the map below, the white line represents Zarahemnah's likely line of march around Hill Riplah and down to a crossing of the Chixoy. The concentric circle symbols represent battle grounds. Z12 represents Captain Lehi's victory over Zarahemnah east of Sidon. Z13 represents Captain Moroni's final victory over Zarahemnah west of Sidon. (See the article "[Sidon East then West](#)" for a list of 35 battles fought in the greater land of Zarahemla enumerated Z1 - Z35). By crossing Sidon from east to west, Zarahemnah hoped to take the city of Manti by surprise.

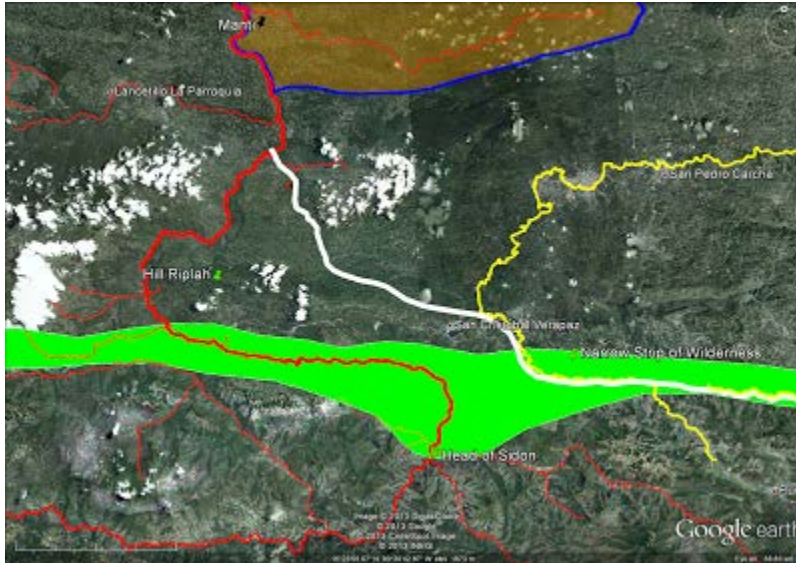


Likely Zerahemnah Battles East and West of Sidon South of Manti

As the map above makes clear, the level ground around our city of Manti is east of Sidon. By crossing over to the thinly populated mountainous terrain west of the river, Zerahemnah's forces could approach the city undetected. The Lamanites never executed their plan. For an extended treatment of Captain Moroni's brilliant battle tactic that led to the decisive defeat of a much larger enemy force, see the articles "[Manti](#)" and "[Captain Moroni in Space and Time](#)." The point is that had Zerahemnah been able to cross the river with his troops and invade Manti from the west (crossing the river a second time from west to east), he could have surprised Manti with little advance warning. Criterion 20 satisfied.

Note: How did the ancients cross a large river such as the Chixoy with an army? They lashed a long string of canoes together several abreast and lashed planks on top, creating a crude pontoon bridge. When Hernan Cortes traveled across northern Tabasco and through the Peten in 1525 on his way to quell a rebellion in Honduras, he and the other Europeans were amazed at the natives' skill building these portable pontoon bridges that were so sturdy they allowed even Spanish horses and cannon to easily cross wide rivers.

21 22. Zerahemnah came from the Antionum Jershon border far to the north east of the head of Sidon. He passed by (about 11 air kilometers away in our correlation) the head of Sidon without ever crossing over it, then crossed Sidon from east to west further downstream. This map shows his likely route in white.



Probable Route of Zerahemnah Passing by the Head of Sidon

The lay of the land in this area allows travel precisely as the text in [Alma 43:22](#) and [Alma 43:40](#) describe.

Criteria 21 & 22 satisfied.

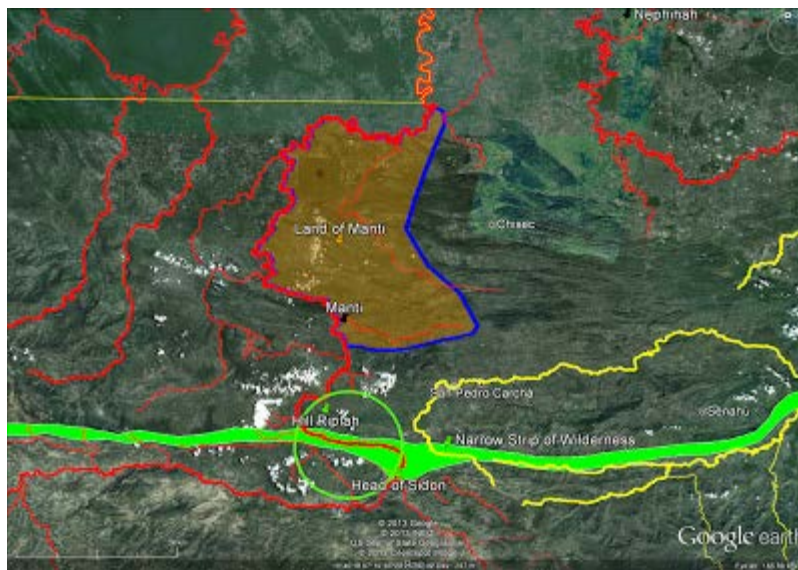
23. On the other hand, according to Helaman's epistle to Captain Moroni, if the Lamanites garrisoned in the western city of Antiparah had wanted to invade the distant city of Nephiah, they would have crossed the head of Sidon en route. This map shows the likely route in white.



Probable Route Antiparah to Nephiah Crossing the Head of Sidon

"Cross the head of Sidon" probably meant cross over the Salama and possibly the Carchela at their confluence with the Chixoy-Negro. The lay of the land in this area supports travel precisely as the text in [Alma 56:25](#) describes. Criterion 23 satisfied.

24. Some students of the Book of Mormon interpret [Alma 22:27](#) to mean the river Sidon itself rather than the narrow strip of wilderness ran east to west in the immediate vicinity of the head of Sidon. Downstream from the Salama confluence, the Chixoy does flow westward for about 25 kilometers before turning generally northward. The region within the green circle on the map below highlights this westward flowing section of the river.



Chixoy Flowing Westward Downstream
from the Salama Confluence

Our candidate for the river Sidon (Chixoy - Salinas - Usumacinta) does flow westward just downstream from our head of Sidon. Criterion 24 satisfied.

25. The geographic feature we have identified as the head of Sidon is the confluence of four streams (the Chixoy - Negro, Salama, Carchela and Santa Gertrudis) that all come together within 1.5 kilometers of each other to form a new river - the Chixoy.



The Confluence of 4 Streams that Form the Chixoy

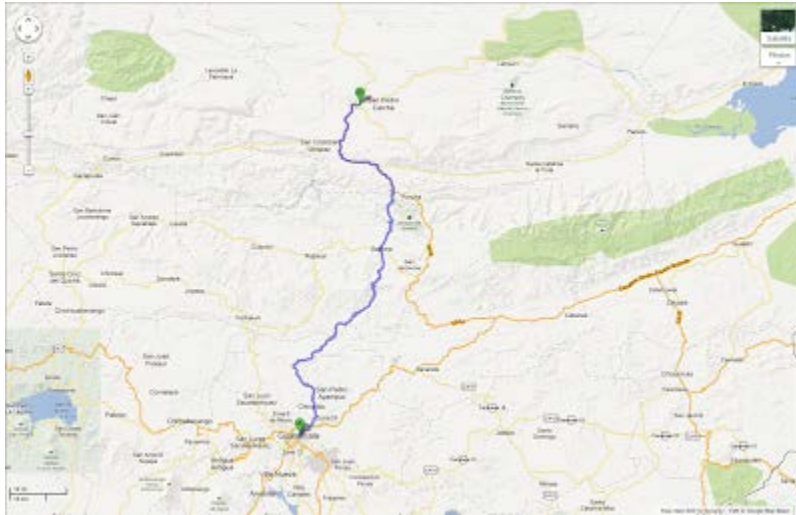
This meeting of the waters precisely fits one of the standard English definitions of a "head" of a river. Geographers pinpoint this very place (the confluence of the Chixoy-Negro with the Salama) as the head of the Chixoy. Criterion 25 satisfied.

26. When the people of Ammon (Anti Nephi Lehies) left the greater land of Nephi and travelled to the greater land of Zarahemla to dwell among the Nephites, they probably followed a route like the one shown in white on the map below. Important way points north of Guatemala City (Kaminaljuyu) included Salama, Baja Verapaz and Coban, Alta Verapaz.



Typical Ancient Route From Kaminaljuyu (Proposed Nephi)
to Chama (Proposed Manti) via Salama and Coban

Notice how similar the ancient trail shown above was to the modern highway route between Guatemala City and Coban.



Google Maps Route Guatemala City (A) to Coban (B) via Salama

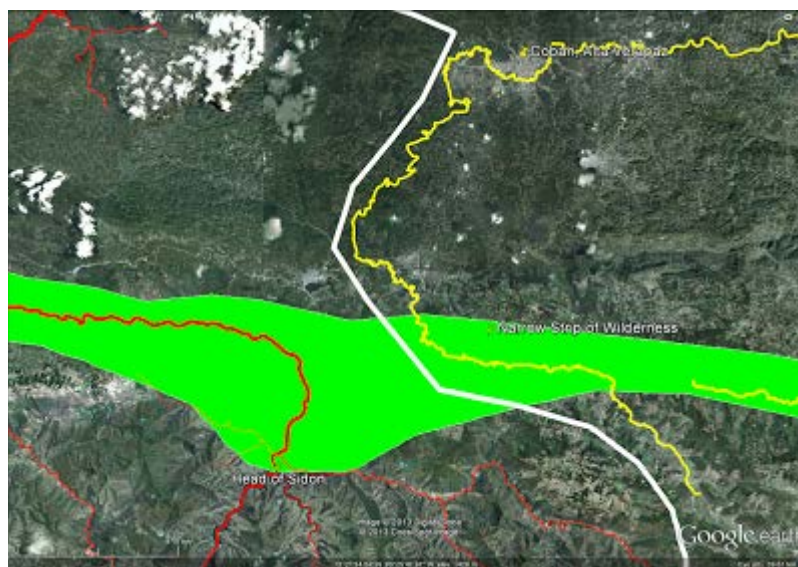
[Alma 27:14](#) tells us the people of Ammon waited in the narrow strip of wilderness while Ammon and his brethren consulted with their fellow Nephites about a homeland for the Lamanite converts. How large a group were the people of Ammon? The text does not specify, but we have some demographic indicators that will help us derive an informed estimate.

- Mormon tells us they numbered in the thousands [Alma 23:5](#) and they came from 4 Lamanite lands (Ishmael, Middoni, Shilom, Shemlon) and 3 cities (Nephi, Lemuel, Shimnilom) [Alma 23:9-12](#)
- In [Alma 23:13](#) Mormon suggests that entire Lamanite cities were converted en masse.
- 1,005 were passively slain by their wicked brethren [Alma 24:22](#)
- More than 1,005 repentant converts immediately joined their ranks [Alma 24:26](#)
- Ammon said they numbered in the thousands [Alma 26:4](#), [Alma 26:13](#)
- Alma also said they numbered in the thousands [Alma 37:9](#)
- They were able to internally raise an army of 2,000 young men of fighting age [Alma 53:18](#)

- Approximately one year later, they were able to send 60 more young men to the front [Alma 57:6](#)
- They absorbed 4,000 former Lamanite warriors who came to live among them in the land of Melek [Alma 62:17](#)

Taking all these metrics together, it is likely that the people of Ammon numbered about 40,000 people. Helaman's 2,000 stripling warriors would then have represented about 5% of the group's population. History shows that a military participation rate of 5% is on the high end of reasonable for most societies and a rate of 10% would be unsustainable under normal circumstances.

Could 40,000 people reasonably have pitched their tents [Alma 27:25](#) and camped for a few weeks with their flocks and herds [Alma 27:14](#) in the territory we have identified as the narrow strip of wilderness along the Nephi to Manti travel route? Yes. The map below shows our area of interest.



Proposed Narrow Strip of Wilderness near Head of Sidon

Our narrow strip of wilderness is in green. Our Sidon (the Chixoy) is in red. The river shown in yellow is the Cahabon. The white line represents the ancient travel route between Salama and Coban. The modern town of Coban is clearly visible near the top of the image. The surface area of our narrow strip of wilderness between the Chixoy and the Cahabon is close to 80 square kilometers. 40,000 people camping in this area would result in a temporary population density of 500 per square kilometer, about the same as

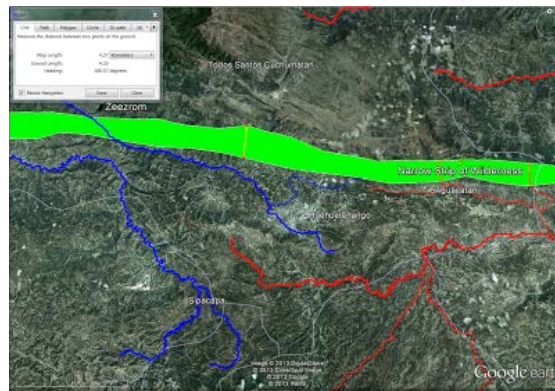
the Netherlands or South Korea, considerably less than Taiwan and about half that of Bangladesh. The current population density of Guatemala is 142 per square kilometer. As a point of comparison, the population of the city of Coban in 2005 was just over 86,000. So, our proposed narrow strip of wilderness was large enough to temporarily accommodate the estimated population of the people of Ammon. Criterion 26 satisfied.

27 28 29. The North American Caribbean tectonic plate boundary is a long string of cliffs represented by a green ribbon on the map below. The actual cliff faces are wider in some areas than in others, but on average the area is 3.3 kilometers wide.



North American Caribbean Tectonic Plate Boundary in Green

This is a closeup of the area around Huehuetenango, Guatemala.



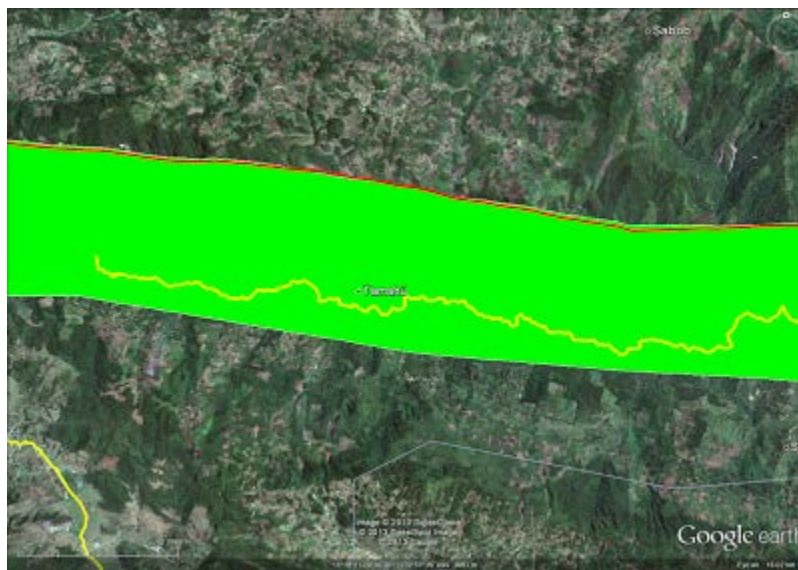
North American Caribbean Tectonic Plate Boundary near Huehuetenango

The ruler on the map above shows the green band is 4.27 kilometers wide at the point indicated.

Our candidate for the narrow strip of wilderness truly is "narrow" according to Nephite usage of that term. See the article "[Narrow and Small Things](#)." It is 460 kilometers long and averages 3.3 kilometers wide, so it clearly qualifies to be a "strip" according to the dictionary definition of that term (much longer than it is wide). Modern geographers often refer to it as a "line" mirroring Nephite terminology. Criteria 27 - 29 satisfied.

30. Obviously a cliff face can be a formidable natural defensive barrier if the defenders control the high ground. We will focus on an area along the Polochic river in the Department of Alta Verapaz, Guatemala.

The red line on the map below is the northern edge of our narrow strip of wilderness.



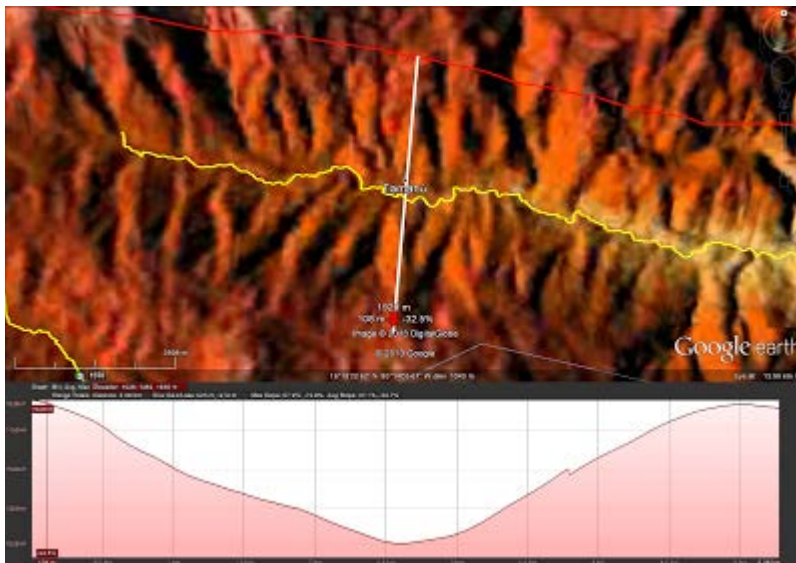
Narrow Strip of Wilderness Along the Polochic

Next, we turn on a shaded relief layer in Google Earth to highlight relative elevation. This makes the cliffs stand out in stark contrast to more level terrain.



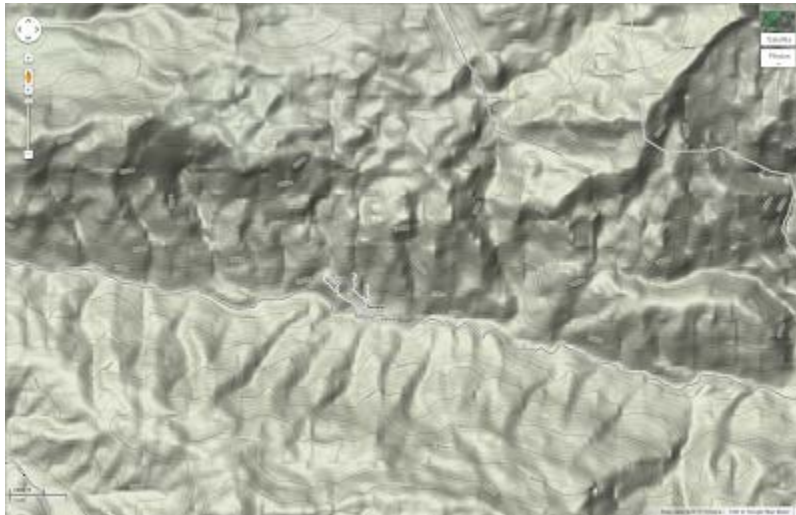
Line of Cliffs Along the Polochic

Placing a transect through the town of Tamahu, we let Google Earth calculate an elevation profile which shows the Polochic valley running through cliffs on either side. In 4.82 air miles of lateral run, the transect goes from 1,938 meters elevation down to the river at 1,028 meters and back up to 1,914 meters on the other side. The steepest cliffs are on the north side of the river.



Elevation Profile of the Polochic Valley at Tamahu

Here is another perspective of the Tamahu area using the terrain layer in Google Maps as our visualization tool.



Terrain around Tamahu, Alta Verapaz, Guatemala

There are only a limited number of natural passes through this long line of cliffs. This topography gave the Nephites a strategic defensive advantage by reducing the number of points along the line they needed to fortify. Criterion 30 satisfied.

31. Archaeologists divide the Maya area into 3 distinct regions:

- The northern lowland Maya in the Yucatan Peninsula
- The southern lowland Maya from the Gulf Coast of Tabasco through the Peten to the Caribbean
- The highland Maya in highland Guatemala and the central depression of Chiapas

This is a map of the generally accepted boundaries between these 3 cultural regions.



Maya Area in White with Highland Lowland Boundaries

Superimposing our correlation of the narrow strip of wilderness and head of Sidon on the map of Maya cultural regions, the correspondences are obvious.

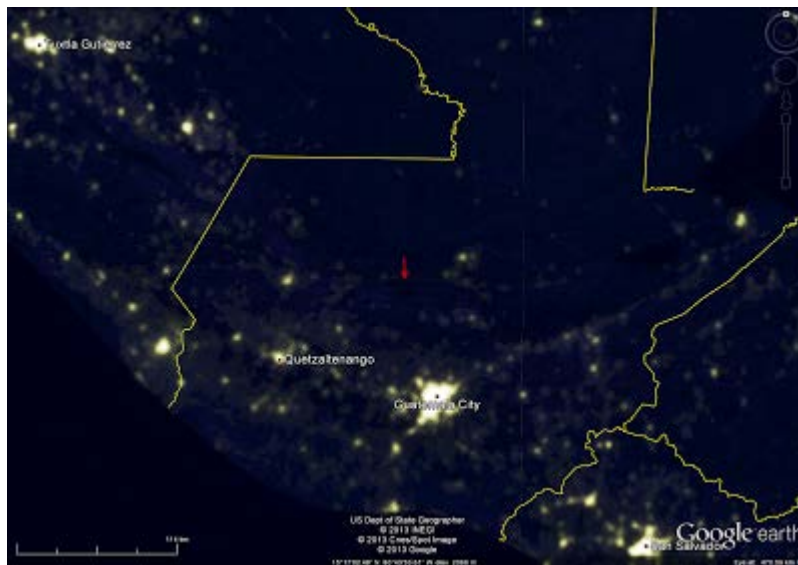


Proposed Narrow Strip of Wilderness and Head of Sidon
Overlaid on Map of Maya Cultural Regions

Not only is the North American Caribbean tectonic plate boundary a significant part of the north south division between the southern lowland Maya and the highland Maya, but the head of the Chixoy is also a key point in the east west border between these

ancient groups. The archaeological literature does contain corroboration for an ancient littoral function associated with our narrow strip of wilderness and head of Sidon. Criterion 31 satisfied.

32. The line we correlate with the Book of Mormon narrow strip of wilderness does demonstrate wilderness characteristics throughout most of its length. It is sparsely populated today. Take a close look at this map showing [NASA's Earth Lights at Night](#). As with all images on this blog, click to enlarge. Notice the small red arrow pointing to a faint line of light that stretches from coast to coast. This line of light shows the location of the east west rivers running at the base of the cliffs that make up our narrow strip of wilderness. Humans tend to settle along streams of water. Also notice there is very little human habitation immediately north of this line of light.



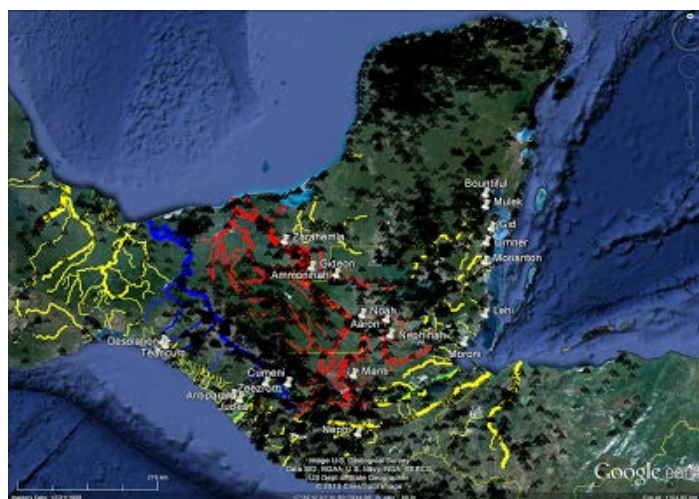
[NASA's Earth Lights at Night Image with Red Arrow Indicating](#)
Faint Line of Light Extending East West Coast to Coast

In another view of Earth Lights at Night, we place the red line marking the northern edge of our narrow strip of wilderness on the image and mark major population centers along its route. Coban is 15 kilometers north of the red line. Huehuetenango is 8 kilometers south of it. Immediately south of the red line [NASA](#) satellite imagery shows little human habitation which is not surprising since humans tend not to settle on steep mountain slopes. Once the line gets out of the Sierra Madre and into the Chiapas coastal plain, population increases significantly as seen in the area around Huixtla, Chiapas.



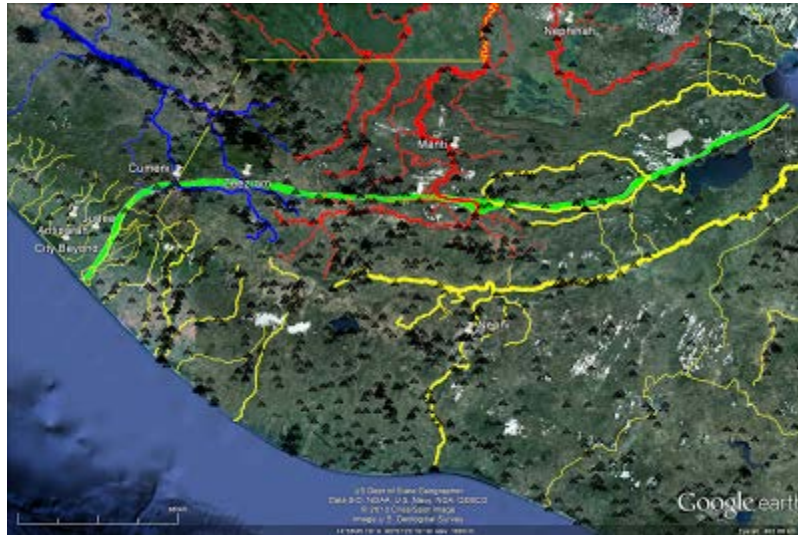
Northern Edge of Proposed Narrow Strip of Wilderness
Overlaid on Earth Lights at Night

We can get a rough idea of ancient population densities by analyzing the incidence of archaeological sites known to science in a given territory. This is a very interesting map. It shows most of the 6,000+ sites in the Electronic Atlas of Ancient Maya Sites ([EAAMS](#)) dataset shown as black pyramids, major Mesoamerican river systems (plotted to date - this is slow, tedious work) in red (Usumacinta), blue (Mezcalapa-Grijalva) and yellow (all others), our correlates for 21 Book of Mormon cities, and the North American Caribbean tectonic plate boundary, our candidate for the narrow strip of wilderness.



[EAAMS](#) Data, Rivers, Proposed Book of Mormon Cities
and the Likely Narrow Strip of Wilderness

Zooming in on our proposed narrow strip of wilderness, we find 12 ancient sites actually within the boundaries of the territory we have designated. Most of those sites are located in natural passes, not on steep mountain slopes. The total surface area of the polygon we call the narrow strip of wilderness is 1,469 square kilometers. Dividing 12 by 1,469 we get an average site density of .0081 sites per square kilometer.



[EAAMS](#) Data, Rivers and the Likely Narrow Strip of Wilderness

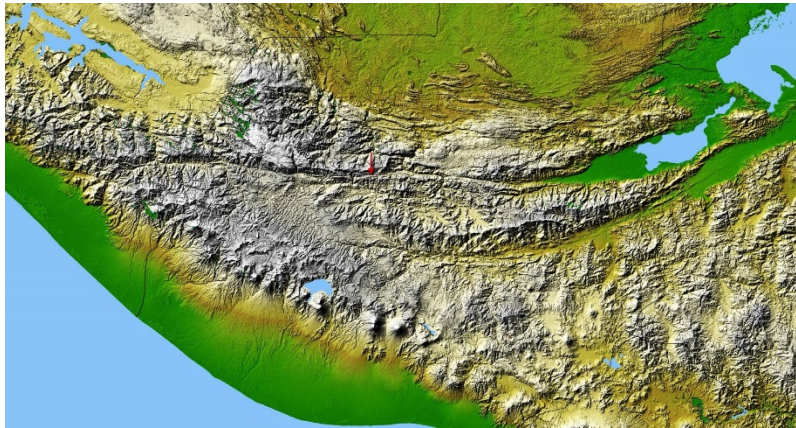
The average site density of the entire Maya area is .017 sites per square kilometer, more than double that of our narrow strip of wilderness. Our proposed narrow strip was lightly settled in antiquity, and those settlements were largely confined to natural passes through the line of steep mountain cliffs.

With small modern populations and relatively few ancient sites, the North American Caribbean tectonic plate boundary area did and does have wilderness characteristics. Criterion 32 satisfied.

With 32 of 32 textual requirements comfortably satisfied, it is likely that the North American Caribbean tectonic plate boundary is the narrow strip of wilderness Mormon had in mind when he engraved the phrase in [Alma 22:27](#).

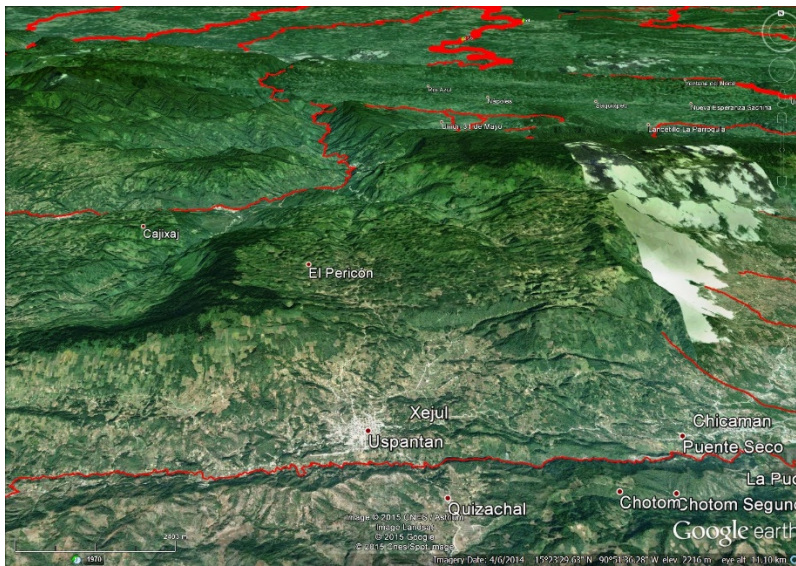
Here is a very clear image derived from the [NASA SRTM Shuttle Radar Topography Mapping Mission](#). The east-west Polochic Fault, aka Cuilco-Chixoy-Polochic Fault, is indicated by a small red arrow located about where Uspantan, El Quiche, Guatemala is today. South of this line, the Sierra de Chuacus and Sierra de las Minas have largely

crystalline rocks from igneous origins. North of this line, the Sierra de los Cuchumatanes and Sierra de Chama are comprised chiefly of sedimentary rocks.



Proposed Narrow Strip of Wilderness Indicated by Small Red Arrow

This line of cliffs and east-west oriented river valleys is a striking physical feature, whether viewed from space or the ground. This is Uspantan, El Quiche, Guatemala and environs.



Uspantan at 1,840 Meters Elevation on the Chicaman

Vertical rise from Uspantan to the 2,900 meter mountain ridge on its northwestern horizon exceeds 1,000 meters. That kind of abrupt verticality runs in a fairly straight line nearly from the Caribbean to the Pacific.

January, 2015 Google Earth Base Image.



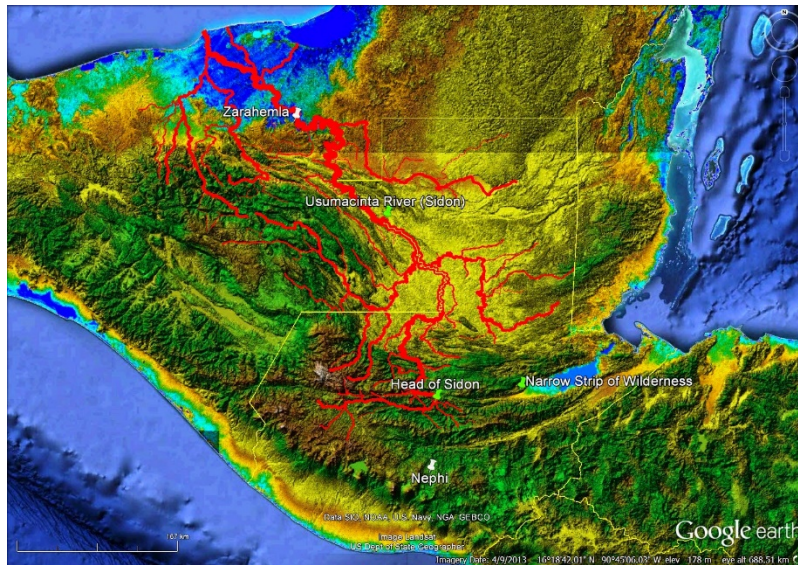
Google Earth

January, 2015 Google Maps Terrain Layer.



Google Maps

Shaded Relief.



Pol Parche Shaded Relief

The narrow strip of wilderness was strategically important to the Nephite nation in the days of Helaman and Captain Moroni. The Cuilco-Chixoy-Polochic Fault fits the text in every particular.

More images are in the article "[Ubiquitous Narrow Strip.](#)"