

Holocene Inundation of the Mississippi Embayment: Arkansas/Missouri

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INTRODUCTION

In previous papers (Noble, 2004a; b; c; d) I described a water body that inundated the West and East Coasts of the United States at the start of the Holocene Epoch roughly 10000 years ago. The papers relating to the East Coast traced the shoreline of this water body across the coastal slope portions of Texas and Oklahoma. The postulated occurrence of this event contradicts the typical scenario described in the research literature for this period. In addition, I asserted that this event, and others both before and after, relate to shifts in the equatorial axis relative to the orbital axis and that a disconnection exists between the Earth and its water. The shifts are recorded by shoreline profiles that tilt in opposite directions and are juxtaposed against today's horizontal levels. Intrinsic to these events are sills that are alternatively submerged or above water and that these are also juxtaposed against similar barriers around the World (e.g., Panama and Bering Strait). Specifically, when the Hudson Bay Slope is emerging the hinterland slopes backing San Francisco Bay (e.g., Central Valley) and the Gulf of Mexico are submerging.

THE MISSISSIPPI EMBAYMENT

My earlier papers (see www.axialshift.com) indicated that sea level at the start of the Holocene (10000 BP), or shortly thereafter, reached up the Mississippi River valley to Keokuk, Iowa, on the main channel; just beyond Boonville, Missouri, on the Missouri River; and upstream from Clinton, Indiana, on the Wabash River. The then Gulf of Mexico had submerged the lower and, in some cases, the middle portions of its constituent river valleys, including the Mississippi and most of its tributaries. Subsequent papers (Noble, 2000c, d) depicted the shoreline's route through Texas and Oklahoma and the small encroachments into adjacent Kansas. This paper follows this same Holocene shoreline through the States of Arkansas and Missouri.

ARKANSAS

Figure 1 depicts the extent of the postulated water body in Arkansas. Offshore islands are not shown for scale reasons. Only the northwest part of the state was not underwater at the time. The shoreline enters Arkansas from Oklahoma north of Interstate Highway 40 and parallels it to about Clarksville and then veers slightly to the northeast towards the Batesville area. The shoreline trends along the base of the rugged Boston Mountains and serves as a demarcation line between them and the adjacent low-relief Arkansas River valley. Common consensus has fluvial processes related to the meandering Arkansas River playing the major role in shaping the valley. I believe, however, that this and other axial shift events, and their respective water levels, were the major instigators. This was the case, not just here where the valley is lodged between the Boston Mountains and a nearby mountain group to the south (e.g., the Ouachita Mountains) that were offshore islands, but also the up-valley termination point for this level near today's Sooner Lake in Oklahoma. In the Flora and Locust Grove area south of Batesville the shore can be traced turning northwest up the White River valley to what is now Bull Shoals Lake. From here it wanders east along the Missouri-Arkansas border to just beyond Mammoth Springs where it turns northeast to continue through the southeast corner of Missouri. The water body portrayed here was intricately involved with the mountain areas of the Ozark Plateau in Oklahoma, Arkansas and Missouri and the famous "hollows" of these States reflect this. Figure 2 presents the elevation isolines in a profile format with appropriate geographic locations.

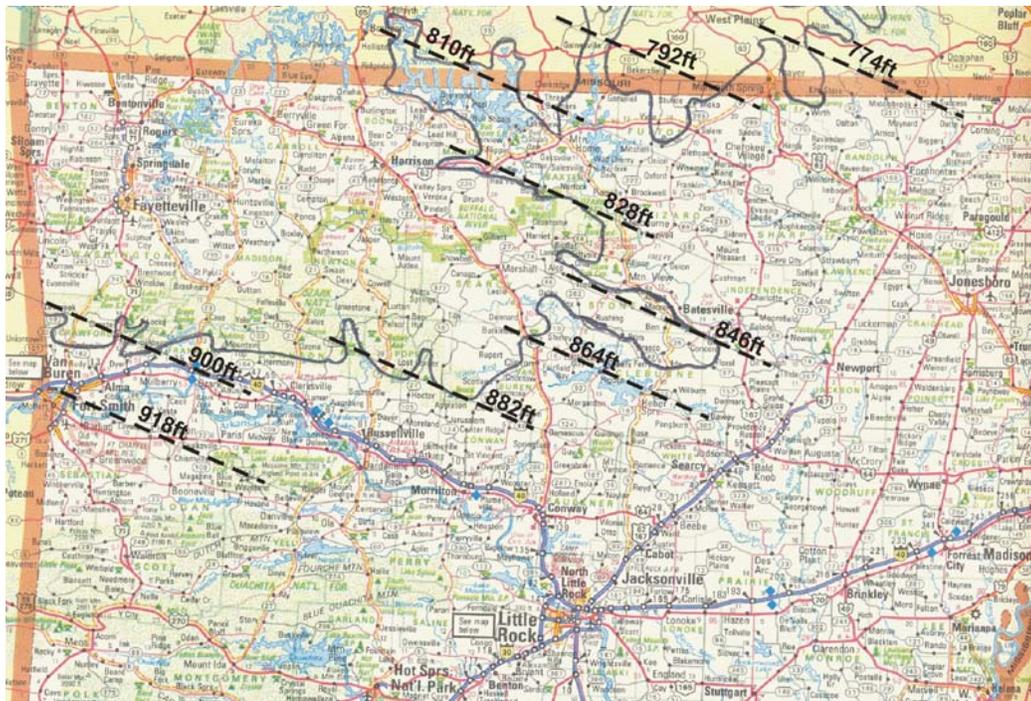


Figure 1. Postulated 1000 BP shoreline with appropriate elevation profiles depicted on a Rand McNally map. The isoline elevations show the shoreline tilting down towards the northeast.

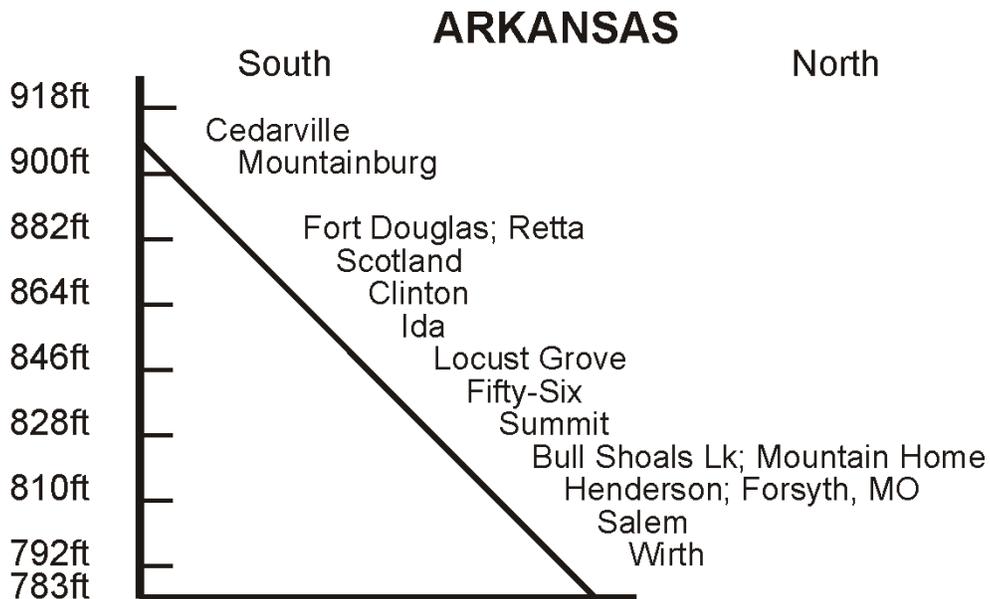


Figure 2. Elevation profile (ratio 1:1) showing the Holocene shoreline tilting down to the north across the northwest corner of Arkansas. The lower Isolines associated with the offshore islands in the southwest are not shown.

MISSOURI

Figure 3 shows the shoreline entering Missouri from Arkansas near Myrtle. From here it crosses the southeast corner of the State in a northeasterly direction towards Perryville where it turns north to follow the western confines of the Mississippi River valley (this wasn't the case on the Illinois side of the valley). As it approaches St. Louis it swings west to follow the Missouri River beyond Boonville to terminate where the Chariton River joins the main channel.

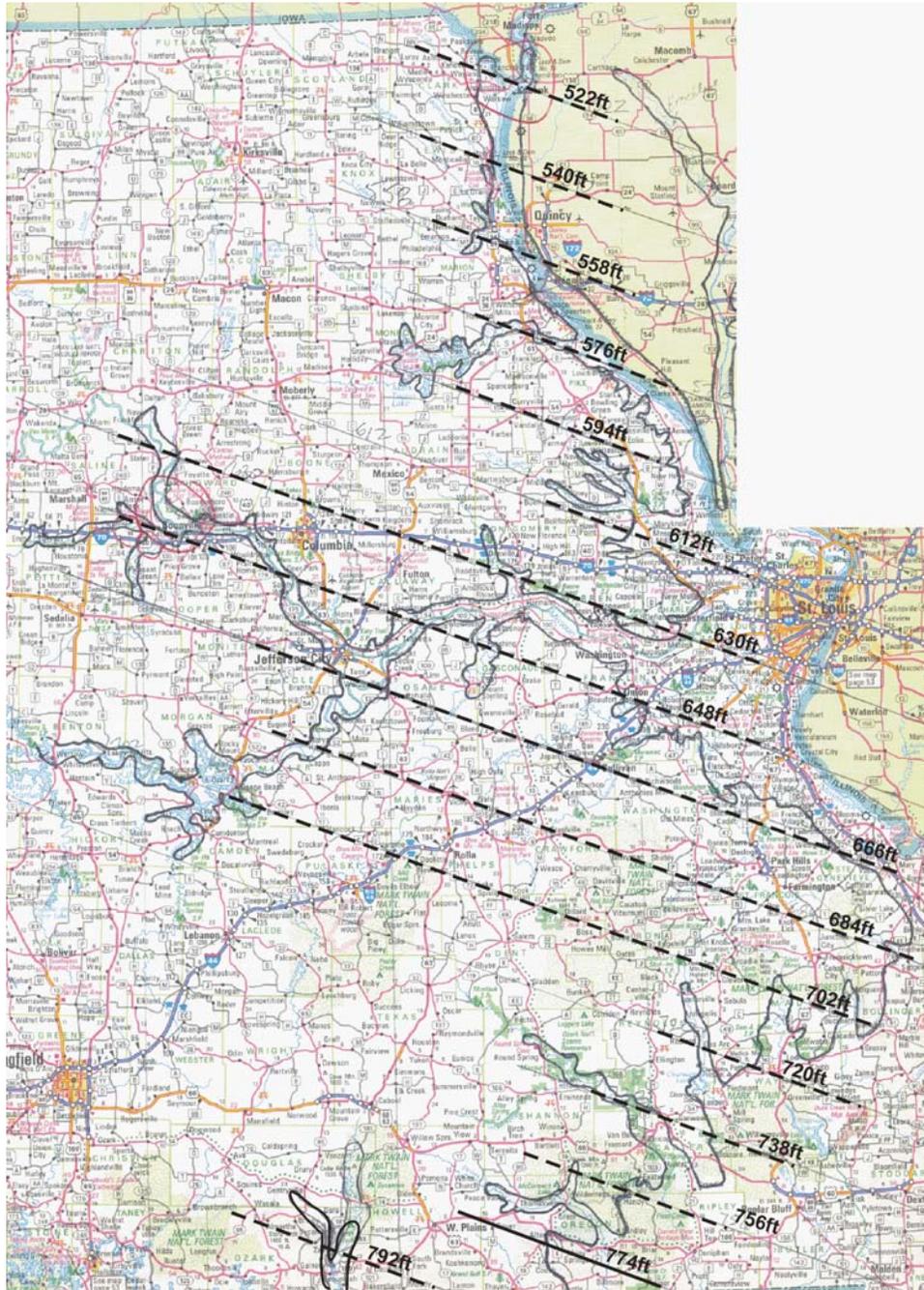


Figure 3. Extent of postulated 10000 BP water body through Missouri. The shoreline tilts down to the north and terminates within the Mississippi Embayment at Keokuk, Iowa.

Major lateral incursions occurred up some of the larger river valleys entering the south flank of the Missouri River valley (e.g., the Blackwater and Osage Rivers). North of St. Louis the water body was restricted to the narrow confines of the Mississippi River Valley in this area with a lateral incursion up the Salt River on the Missouri side and a longer one up the low-gradient Illinois River. The shoreline terminates within the Mississippi Embayment at Keokuk at the former Des Moines Rapids, which are now flooded by a reservoir. Figure 4 presents the elevation isolines in a profile format with appropriate geographic locations.

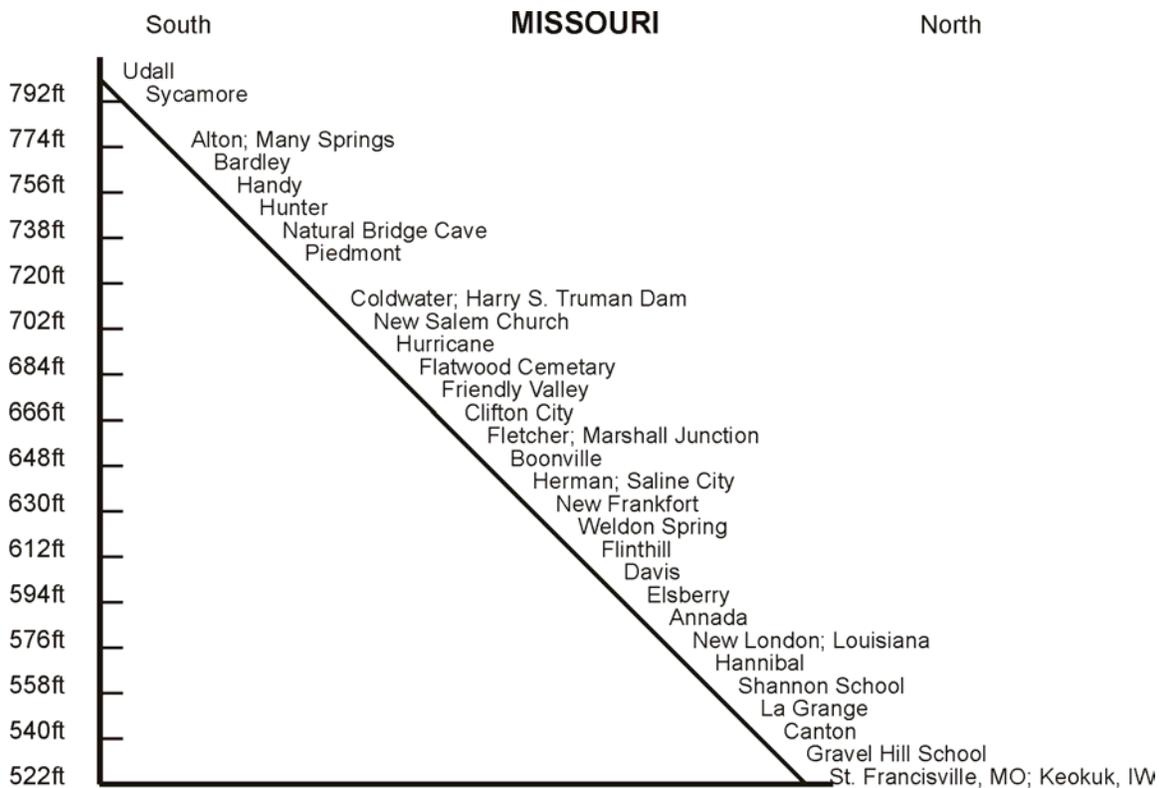


Figure 4. Elevation profile (ratio 1:1) showing the Missouri portion of the Holocene shoreline tilting down to the northeast.

SUMMARY

This paper traces the route of the postulated 10000 BP Holocene water body through the States of Arkansas and Missouri to its upstream Mississippi River terminus at Keokuk, Iowa. A later paper will trace it down the eastern side of the valley. I have broken the treatment of this event into a number of papers pertaining to individual States for both scale and ‘file size’ reasons. As with the previous papers the figures provided allow readers to follow the shoreline’s route by using web sites that provide map and aerial photograph services (e.g., Terraserver.microsoft.com, Topozone.com). It is important to remember that I have used straight-line isolines for convenience. The isolines are actually rotated latitude lines that arc a certain amount given the map projection used.

References

Noble, T.W., 2004a. Sea Level and the Columbia River Basin at the Beginning of the Holocene: www.axialshift.com.

Noble, T.W., 2004b. Holocene Seawater Incursion of California's Valleys: www.axialshift.com.

Noble, T.W., 2004c. Seawater Inundation of Texas at the Beginning of the Holocene: www.axialshift.com.

Noble, T.W., 2004d. Holocene Inundation of the Gulf of Mexico Hinterland - Oklahoma: www.axialshift.com.