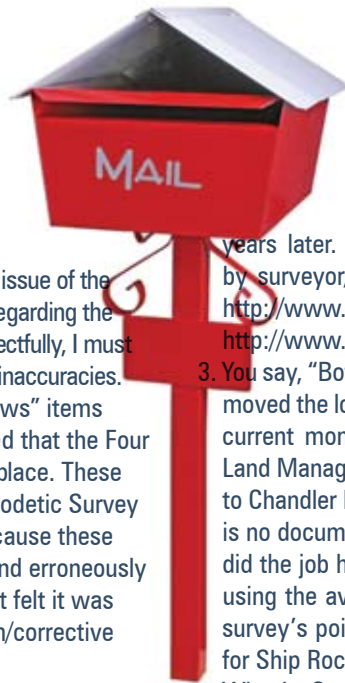


comments



Dear Dr. Map,

In the "Ask Dr. Map" column of the April 2009 issue of the *ACSM Bulletin*, you responded to a question regarding the location of the Four Corners monument. Respectfully, I must point out that your response contains several inaccuracies.

Numerous web, print, and broadcast "news" items appearing in the past several weeks claimed that the Four Corners survey monument is in the wrong place. These stories also suggested that the National Geodetic Survey (NGS) is the source of this "discovery." Because these stories contained numerous inaccuracies and erroneously cited NGS as the source, NGS management felt it was important that NGS issue some clarification/corrective information.

This information is posted on the NGS Web site, at <http://www.ngs.noaa.gov/INFO/fourcorners.shtml>. I hope you find this document to be helpful and of interest. An abbreviated version is published in this issue of the *ACSM Bulletin*.

Because the Four Corners issue is boundary-related, we asked the Bureau of Land Management (the federal agency responsible for many boundary issues) to review our document; they did so and they concur with its contents.

I'd like to point out a few specific errors in your column:

1. You say, "The point was originally declared by Congress to be (with respect to the Washington Meridian) equivalent to 37°N 109°W." Perhaps I don't understand your statement, but in fact, the point was declared by Congress (by way of specifying the boundaries of the four territories involved) to be on the 32nd meridian west of the Washington Meridian (which is at approximately 77°03' W of Greenwich); this means that the Congressionally specified longitude of the Four Corners is 109°03' (approx) W of Greenwich. The confusion surrounding the Four Corners point seems to pertain solely to its longitude, so that's what I'm focusing on here.
2. You say, "It was initially surveyed by E. N. Darling in 1868, and a permanent marker was added in 1912." In fact, it was initially surveyed by Chandler Robbins in 1875, who marked it with a substantial sandstone monument (and the point has been re-monumented several times over the years). Robbins was contracted to survey the entire NM-AZ territorial boundary, and the Four Corners was the northern terminus of this meridional boundary survey. In 1868, E. N. Darling surveyed the CO-NM territorial boundary, along the 37th parallel, but he did NOT establish the Four Corners monument. Robbins did that seven

years later. You can find some very interesting essays by surveyor/historian Fred Roeder about this history at <http://www.amerisurv.com/content/view/5965/136/> and <http://www.amerisurv.com/content/view/6057/136/>

3. You say, "Both a surveying error and a datum change have moved the location to approximately 2.5 miles east of the current monument, where there is a simple Bureau of Land Management cadastral marker." I feel it an injustice to Chandler Robbins to call this a "surveying error." There is no documented surveying error involved here. Robbins did the job he was hired to do, to the best of his abilities, using the available technology and data of the time (his survey's point of beginning was the geographic position for Ship Rock, which had been determined by the federal Wheeler Survey the previous year; Robbins' survey results could be no better than the starting coordinates he was provided). Yes, datum changes do result in coordinate changes for a given location, but your reference to a 2.5-mile shift indicates that you are under the impression that the point was originally intended to be at 109°W longitude (relative to Greenwich) ... and that was never the case.
4. You say, "The actual location, however, is not where the monument is! The web site www.confluence.org, dedicated to finding intersections of the world's graticule at one degree increments on WGS-84, places the location not 2.5 but 2.2 miles (3.5 km) East of the monument, 115 meters north of the Colorado/New Mexico state line on the Ute Mountain Reservation." Again, it seems that you are confusing the "confluence" location (37N/109W) with the intended location of the monument. That "confluence" point really has NO bearing on the Four Corners monument location. This misunderstanding is, we believe, what got this whole thing started. The monument was always intended to be at a longitude of 109°03' (approx) W ... NOT at 109°0'W.

Thus, as discussed in the document we posted on our Web site, and in its abbreviated version which follows, the Four Corners monument is, in fact, in exactly the right location.

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