
X MARKS THE SPOT #10

By Lorraine A. Manz

Hill-hole pairs like the one marked by the X are common in parts of central North Dakota and the Canadian provinces of Saskatchewan and eastern Alberta. The landform on the map measures approximately 1.5 miles in length and the depression, located at its northeast end (above and right of the X), is occupied, as is often the case, by a small lake. The adjacent upland to the southwest (below and left of the X) is more than 150 feet higher than the lake surface. Compared to similar hill-hole pairs this one is actually quite modest in size.

When you have identified the landform on the map, submit your name, mailing address, phone number or e-mail address, and responses to the following questions:

1. What type of landform is marked by the X?
2. What are the official geographic names of the hill and the hole?
3. Extra credit: by what geologic process was the hill-hole pair formed?

Respondents who provide the correct answers will be eligible for prizes. Two names will be randomly drawn from a winners' pool by NDGS staff. Each winner will receive a copy of the *Prehistoric Life of North Dakota* poster, which was featured in the June 2005 Newsletter.

Please submit responses by February 15, 2006. Winners of our drawing and the correct answers will appear on our web site shortly thereafter and in the next issue of the *DMR Newsletter*.

Answers submitted by mail should be sent to:
Editor, *DMR Newsletter*
Attn: Spot Contest
North Dakota Geological Survey
600 E. Boulevard Ave.
Bismarck, ND 58505-0840

Answers submitted by e-mail should be sent to:
ndgspubs@state.nd.us



To submit answers via the web, visit our homepage at <http://www.state.nd.us/ndgs> and select the link labeled “X Marks the Spot.” Only one answer permitted per person. The contest is not open to employees of the Industrial Commission or members of their families.

Answer to X Marks the Spot #9

Thirty-one readers submitted responses to contest number nine, all of whom correctly identified the X as marking the geographic center of North America. Of these, twenty-two gave its correct position at latitude 48° 10' North and longitude 100° 10' West. The city that shares its name with a popular British sport and a school made famous by 19th century author Thomas Hughes is Rugby (Hughes wrote Tom Brown’s Schooldays, which was set at this famous British public school). **Dan Farrell** and **Ray Greenwood** were the lucky winners drawn by our Administrative Assistant Linda Johnson. Dan will receive a copy of *The Face of North Dakota* and Ray will receive a *Geologic Map of North Dakota*. Thanks to all for participating.

Correct answers were submitted by:

Tam Black	Minot
Gary Brekke	Fargo
Gerald Bryn	Devils Lake
Tim Dokter	Fargo
Doug Driesner	Carson City, NV
Mike Duffy	Minot
Dan Farrell	Bismarck
Ken Gardner	Drayton
Jay Gilbertson	Brookings, SD
Ray Greenwood	Jamestown
Ken Hedmark	Tower City
Terry Jorgenson	Eden Prairie, MN
William Locke	
John Mrozla	Harwood
Ramsey family*	Crystal
Jerry Reinisch	
Carson Rittel	Socorro, NM
Gary Splittberger	Billings, MT
Kevin Sullivan	Traverse City, MI
Kevin Swanson	Shoreview, MN
Wayne Hankel	Fargo
Barrett Williams	Tucker, GA

*Ramsey family submitted one response as part of a collective effort.

According to the U.S. Geological Survey online publication *Elevations and Distances in the United States* (2005) the geographic center of the North American continent is located “6 miles west of Balta, Pierce County, North Dakota.” Its approximate coordinates are given as latitude 48° 10' North, 100° 10' West. This description was taken from an earlier report published in 1930 by E. M. Douglas, the only

difference being that Douglas used Devils Lake as a point of reference rather than the town of Balta. (The change was made because Balta is considered a more readily identifiable and permanent location.)

In 1931 the town of Rugby claimed the “Geographical Center of North America” for its own and erected a stone monument, or cairn, to that effect. Originally, the monument was located northwest of the intersection of US Highway 2 and State Route 3, but after the widening of Highway 2 in 1971 was moved to its present position on the southeast side of the junction (Fig. 1). The Rugby Area Chamber of Commerce (2003) gives the monument’s coordinates as latitude 48° 21' 19" North and longitude 99° 59' 57" West, although these appear to mark its original location rather than the present one. Dondi Sobolik of the Chamber also believes this to be the case and went on to say that his own research has revealed several sets of coordinates all claiming to be the geographic center. But as far as geographic centers are concerned, exact coordinates are not important, as the following discussion will show.

The U.S. Geological Survey does not recognize the geographic center of North America (or that of the 50 States or the conterminous United States) as exact locations. The reason for this is that there is no generally accepted definition of a geographic center and no reliable way of determining it. Consequently there are probably as many geographic centers of a given area as there are definitions. Both Douglas (1930) and the U.S Geological Survey define the geographic center of an area as “...that point on which the surface of the area



Figure 1. The “Geographical Center of North America” in Rugby. The three flags represent the countries that make up the North American continent (Canada, the United States, and Mexico). A sign post showing distances to some of the more far-flung corners of the continent, including Acapulco and the Arctic Circle, stands a few yards away. The flags are flying at half mast in recognition of the victims of Hurricane Katrina. (Photo by L.A. Manz, September 12, 2005)

would balance if it were a plane of uniform thickness,..." This point of balance is the area's center of gravity. The U.S. Geological Survey's published coordinates for the geographic center of North America are based on this definition. Even so, it is clear that any attempt to determine the center of a landmass the size of the North American continent, with its variable and complex topography can only be an approximation at best. The calculation is further complicated by other factors including the curvature of the earth, the presence (or absence) of large bodies of water, and whether or not the term "North America" should include offshore islands.

The "official" position (exclusive of islands) of the geographic center of North America at latitude 48° 10' North, 100° 10' West is thus no more than an approximation, and we can never reasonably expect it to be any more than that. And on a continent where extreme distances are measured in

thousands of miles a sixteen-mile discrepancy is miniscule. So Rugby deserves to keep its monument. It is an intriguing tourist attraction and far more accessible than the muddy bottom of a slough!

References and further reading

Douglas, E.M., 1930, Boundaries, areas, geographic centers, and altitudes of the United States and the several states, with a brief record of important changes in their territory and government: USGS Bulletin 817, 265 p.

United States Geological Survey, 2005, Elevations and Distances in the United States: Online Edition, URL - <http://erg.usgs.gov/isb/pubs/booklets/elvdist/elvdist.html>

Rugby Area Chamber of Commerce, 2003, Geographical Center of North America: URL - <http://rugbynorthdakota.com/Tourism/GCenter.aspx>