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REDEFINING THE DUST BOWL REGION VIA POPULAR PERCEPTION AND GEOTECHNOLOGY

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ABSTRACT—The Dust Bowl is a historical vernacular region that has been delimited by a diverse group of academics, literary authors, and popular cultural voices. However, the general public’s perception of the Dust Bowl region has not been mapped and analyzed. This research queried residents of 93 Great Plains counties in order to ascertain their perceptions and knowledge of the vernacular Dust Bowl region. Analysis of the responses via the application of geographic information system mapping reveals striking differences between respondents of varying age and place of residence. Findings suggest that spatial understanding of the Dust Bowl phenomena is eroding among young people in the Great Plains. Diminished knowledge of human-environment dynamics should raise concerns in light of the recurrent nature of drought in the region.

Key Words: drought, Dust Bowl, environmental perception, GIS, vernacular region

INTRODUCTION

No one during the late 1930s or since has agreed on the actual boundary that determined when a person or region was in the Dust Bowl. (Bonnifield 1979:2)

While R.L. Heathcote echoed this sentiment with his statement that “cartographic definitions of the limits have been relatively few” (1980:3), subsequent decades have, in fact, produced varied maps of the region. In this article we briefly address the Dust Bowl regional definitions that have informed the public to date and then turn our attention to the citizens of the Great Plains. By drawing maps, 355 respondents provided a graphical depiction of their perception of the region. These vernacular regions are the focus of analysis and discussion here. The findings reported are part of a larger initiative to chart the human-environment relationship in the Great Plains in terms of varying spatial and generational understandings of the Dust Bowl as a region, era, and event.

Both popular and academic sources addressing the Dust Bowl have often failed to explicitly delimit the Dust Bowl region. Problematic regional definitions include those that are merely generalized descriptions of the Great Plains environment (Shindo 1997; DeAngelis and DeAngelis 2002) or are tied to a specific location with limited regional context (Low 1984). For example, DeAngelis and DeAngelis inform their young readers that the Dust Bowl included “drought-stricken Texas, Kansas, Oklahoma, and neighboring states” (2002:18). Worster ([1979] 1982:29) relates the transient and convoluted nature of the Dust Bowl region through statistics and anecdotes alike, before concluding that “wherever
there were dust storms and soil erosion there was a Dust Bowl, and by that test most of the Great Plains was ‘in it’ during a part of the 1930s.” Difficulties associated with defining the region may also reside in the idea that the Dust Bowl can be considered a formal, vernacular, or even functional geographical region. This ambiguity echoes the common conceptual ground of region, era, and event that the Dust Bowl occupies. Delimitation of the region along formal lines (based on one or more traits) has been attempted using physical attributes such as wind, wind erosion, drought, and soil type (Bonnifield 1979; Hurt 1981; Cunfer 2002, 2005), and/or human/cultural variables such as migration, health (e.g., dust pneumonia), religion (Lookingbill 1994; Cunfer 2005), and economy (Riney-Kehrberg 1994). Functional definitions (political, social, or economic delineations) of the region are less likely but can be applied as well. For example, soil conservation districts created in 1936-37 delineate a functional Dust Bowl region (Worster [1979] 1982; Hurt 1985).

In topically relevant academic literature that does offer a Dust Bowl regional definition, the most common representations are wholly or largely derived from wind erosion maps found in the National Archives that were the basis for Worster’s ([1979] 1982) seminal map. Even when the basis of a regional definition is presented, it is difficult to delineate a Dust Bowl region without the aid of a map. For example, where is the dividing line between “southwest Kansas” and “central Kansas?” In the balance of works that do provide a map, rationalization for map boundaries is lacking, and it is common for there to be no reference to source material or variables considered for developing the map (Lauber 1958; King 1997; Carlile 1999; Meltzer 2000; Lookingbill 2001; Connell 2004; Cooper 2004; Egan 2006; Babb et al. 2007). For example, Shindo’s (1997) fascinating examination of the ways Dust Bowl migrants have been portrayed by American popular culture provides a woefully inadequate spatial context for the source area of the migrants. Lacking a map, the text merely describes the source area as “from the Southwestern United States—especially the states of Oklahoma, Arkansas, Missouri, and Texas” (Shindo 1997:1).

Therefore, the Dust Bowl is like other geographic regions, a complicated and fluid real-world space that must be analyzed and simplified to be delineated. This research attempts to shed light on what can best be considered the vernacular Dust Bowl region, from the perspective of contemporary inhabitants. A vernacular region is perceived to exist by its inhabitants and is based on “the collective spatial perception of the population at large” (Jordan-Bychkov et al. 2006:444). The vernacular Dust Bowl region is addressed here via the creation and analysis of Dust Bowl regions defined by study-area inhabitants. Illumination of variation in vernacular regions can shed light on the evolving understanding of human-environment history in the region. In light of the recurrent nature of significant drought events on the Great Plains (Clements 1938; Borchert 1971; Wedel 1979; Hurt 1981; Malin and Swierenga 1984; Lee and Tchakerian 1995; Wood 1998; Cordova et al. 2005), the erosion of knowledge evident in these findings presents cause for concern.

METHODS

Data for this study were obtained from a questionnaire administered to 372 voluntary participants in 93 counties of the Great Plains. The 93-county study area correlates with counties of Colorado, Kansas, New Mexico, Oklahoma, and Texas that have more than 50% of their area included in any one of the three wind erosion areas identified on Worster’s ([1979] 1982) Dust Bowl map. Because the identification of spatial variation across the study area was of paramount importance, participants were obtained via convenience sampling at each of the county courthouses in the 93 study counties. Additional research objectives sought to identify generational variation within the study area. Therefore, a respondent for each of four age groups (20-39, 40-59, 60-79, 80 and older) was identified and queried within each county. Respondents included persons visiting the courthouses for various administrative tasks and courthouse personnel, as well as acquaintances of these two groups. Demographic data collected from respondents demonstrated that a representative sample of the study-area population was obtained via this sampling methodology.

Vernacular definitions were collected in two ways: by questionnaire question and by hand-drawn maps. A questionnaire item asked respondents, “What single state do you most strongly associate with the Dust Bowl?” and was followed by an item asking, “What other state(s) do you associate with the Dust Bowl?” An additional item asked respondents, “Draw a closed line around the Dust Bowl region on the map below.” The map was 7 inches by 10 inches and displayed the contiguous United States at a scale of 1:20,000,000. All states were labeled and major rivers were shown but not labeled.

Maps were completed by 355 of 372 respondents. The remaining 17 respondents were not familiar with the Dust Bowl term and subsequently could not portray it on a map. Respondent maps were scanned at a resolution of 200 dots.
per inch to create a digital image that could be utilized with ArcGIS software. Regions were then georeferenced to a U.S. map and each region was onscreen-digitized (a tracing procedure that creates new digital features in the geographic information system, or GIS, that can be further analyzed).

ArcGIS software was utilized to create a geographic grid that measures approximately 8.5 km (east-west) by 12.2 km (north-south), resulting in grid cells that are approximately 94.6 km². The grid was intersected with each respondent-defined Dust Bowl region, and the frequency tool in ArcGIS provided a list of the unique occurrences and their frequency for the grid cells as a whole and by various groups (e.g., by respondent age group). Grids were included in the frequency counts for the polygon analysis if the centroid of a respective grid cell fell inside the respective respondent’s regional map. Before discussing the products of these techniques, the following assessment of previously defined Dust Bowl regions provides a comparative context for discussion.

RESULTS

Previously Defined Dust Bowl Regions

Fifty sources including academic texts, juvenile texts, Internet sites, and literature with a Dust Bowl focus were reviewed for their portrayal of the Dust Bowl region. Twenty-eight of these sources included some form of map portraying the boundaries of the Dust Bowl. These maps varied widely in terms of thematic content, explicit purpose, Dust Bowl terminology, sources cited, projection employed, image resolution, and cartographic merit. The collection of previously defined Dust Bowl regions includes four maps from the Internet (Mantin 1997; Public Broadcasting Service 1998; U.S. Department of Agriculture Wind Erosion Research Unit 1999; World Maps Online 2007), two from literature (Carlile 1999; Henderson 2001), one from an historic Chamber of Commerce publication (Riney-Keohrberg 1994), twelve from academic texts (Joel 1937; Floyd 1950; Bonnifield 1979; Hurt 1981, 1985; Worster [1979] 1982; Riney-Keohrberg 1994; Wunder et al. 1999; Lookingbill 2001; Cunfer 2005; Egan 2006; Babb et al. 2007), and nine from juvenile texts (Lauber 1958; Farris 1989; Stanley 1992; King 1997; Meltzer 2000; Katzin 2002; Connell 2004; Cooper 2004; Heinrichs 2005). Some clear commonalities between the maps are apparent. The most noticeable is the high number of regions that exhibit nearly exact boundaries in the vicinity of the Texas and Oklahoma panhandles, south- eastern Colorado, and western Kansas. These regions have likely been based on the National Archives/Worster maps of the Dust Bowl. Additionally, the western sides of the regions display more correspondence than the eastern sides. The mean region size is 547,544 km² with the largest region provided by Katzin’s (2002) area damaged by dust storms at 1,882,231 km². For comparison, the area of the state of Oklahoma is 181,035 km².

Of the remaining maps, some are plausible delineations that can even be applauded as is the case of Carlile’s (1999) use of a faded border to indicate decreasing severity (of some unnamed variable[s]). Soil type, percentage in cropland, percentage difference from mean rainfall, five-year mean rainfall, mean March temperatures by year, and difference from mean temperature by year are Dust Bowl causal factors that are the basis for a series of GIS-based maps by Cunfer (2002, 2005). Considered alone, these variables portray different yet appropriate Dust Bowl regions.

McDean (1986) has documented that writers have placed the Dust Bowl in general agreement with the Great Plains, in states outside the Plains, or anywhere dust blew in the 1930s. This last association occurs when writers correlate all 1930s drought with the Dust Bowl. McDean claims that a major problem in locating the Dust Bowl has been this tendency of historians to fail to distinguish the Dust Bowl from other areas of drought (1986). This may explain some of the larger Dust Bowl regions that have been published. A problem inherent to many of the portrayals is a lack of communication by authors to their audiences in regard to the difficulties of spatially portraying the Dust Bowl. Additionally, there is generally very little explanation as to the variables considered for constructing their respective maps. For these reasons it is difficult to complete comparative and summary geostatistical analysis on the previously defined maps because they are largely “apples and oranges” in terms of purpose, title, audience, and cartographic representation. Nonetheless, ours is not the first research endeavor to examine different definitions of the Dust Bowl region. Heathcote (1980) illustrated five overlapping Dust Bowl regions in his work on the perceptions of desertification. Unfortunately, Heathcote does not afford the reader a key to the five regions presented. Two of the regions can be tied to previous sources (Joel 1937; Floyd 1950) by their unique boundaries, one represents the entirety of the Great Plains, and we were unable to identify the remaining two.

Cronon (1992) has documented the ways the Dust Bowl narrative has evolved through time. Although initial
New Deal-era accounts placed blame for the disaster squarely on agriculturalists of the region, later descriptions often employed a tone of triumph. Humans had not been defeated by the harsh Great Plains environment. When viewed chronologically, the previously defined regions do not exhibit a corresponding evolution. There are no dramatic trends in terms of placement or total area. The slight trend toward larger Dust Bowl regions through time can largely be explained by the disproportionate release of youth-oriented texts in the last two decades (Farris 1989; Stanley 1992; King 1997; Meltzer 2000; Durbin 2002; Katzin 2002; Cooper 2004; Heinrichs 2005). These voices have proven to be the sources of the largest and most amorphous previously defined regions (Porter 2007).

Geostatistical Analysis of Previously Defined Dust Bowl Regions

Like the respondent-defined Dust Bowl regions, the previously defined Dust Bowl regions were scanned into a digital format, displayed in ArcGIS, georeferenced, and digitized. These maps were aggregated and an equal interval classification of grid cells for the 28 previously defined regions was created (Fig. 1). The strong influence of the National Archives/Worster map is illustrated. However, the consensus of previously defined maps presents a Dust Bowl region that is slightly more compact, shifted to the west, and having a more limited southern extent than the National Archives/Worster map.

The consensus region as portrayed by the equal interval classification also shows that the western and northern gradients of the region are steeper than the southern and eastern sides. This indicates that there is more agreement among the maps regarding the placement of western and northern boundaries and more disparity regarding southern and eastern boundaries. Interestingly, the northern boundaries of previously published maps often correlate with the political boundary of the Nebraska/Kansas state line. On the other hand, the steeper western gradient can be associated with the physical boundary of the Rocky Mountains.
Centroids of previously defined Dust Bowl regions can be calculated and displayed to illustrate the general distribution of the respective regions on a point basis (Fig. 2). A centroid is the geometric center of a feature, such as a Dust Bowl region, and is calculated in ArcGIS via the feature-to-point tool. Centroids of previously defined regions are clustered in southwest Kansas and the panhandle of Oklahoma.

The mean center of the previously defined region centroids can also be displayed. The mean center is calculated by summing the x-coordinate values and dividing the total by the number of features, and then doing the same for the y-coordinate values (Fig. 3). The resulting x, y coordinate pair is the location of the mean center (Mitchell 2005). The mean center of the 28 centroids is located in Stevens County, KS, approximately 45 km from the National Archives/Worster centroid. The mean center for the previously defined region centroids would be even closer to the National Archives/Worster centroid if it had not been disproportionately influenced by a handful of southern and eastern outliers. Thus, the published record exhibits a high degree of spatial correlation in depicting the Dust Bowl. Is this agreement, however, reflected in the general public’s understanding of the spatial dimensions of the Dust Bowl?

Respondent-defined Dust Bowl regions, in contrast to the previously defined regions, are more readily subjected to geospatial analysis as a result of the common base map and drafting method employed in their creation. Additionally, the spontaneous circumstance of questionnaire administration steers respondents to quickly construct and portray their holistic concept of the Dust Bowl vernacular region on the questionnaire. While respondents likely utilized a wide range of sources and experiences to create their mental concept of the region, the common methodology provides a set of comparable maps more suitable to geospatial analysis.

Respondents’ digitized and georeferenced Dust Bowl vernacular regions were grouped and analyzed by age.
and state of residence. A clear relationship between respondent age and region size is evident (Fig. 4). Why are the youngest respondents’ Dust Bowl regions nearly three times the size of the oldest respondents’ regions? A quick study of the respective groups’ regions shows that a typical 20-39 age-group region is a generalized oval that encompasses much of the central United States. By comparison, the typical 80-plus age-group region is not only smaller but more detailed as evidenced by diminished regional symmetry.

While size is one way to get a feel for the public’s perception of the spatial manifestation of the Dust Bowl vernacular region, the placement of those polygons is the next facet to examine. An analysis of the center point (centroids) of each polygon, as well as the spatial relationship of the mean centers of the state and age categories, reflects strong home-state bias. For example, Colorado respondents generally provided the westernmost regions and subsequent centroids. Likewise, Texans’ regions are the most southern. The state groups’ mean centers result when the calculation for mean center is applied to the state centroid groups. In this comparison, the average center point for all Kansas respondents was 37.79°N, 99.7°W, the northernmost and easternmost mean center of the state groups. The westernmost state mean center was created from the centroids of Colorado respondents at 37.31°N, 101.45°W, while Texas respondents delivered the southernmost state mean center at 35.85°N, 101.00°W. Not surprisingly, the Oklahoma state mean center is the most centrally located of the five at 36.64°N, 100.60°W. This state mean center illustrates the tendency respondents have to associate the Dust Bowl with their state, in that Oklahoma respondents managed to center their collective Dust Bowl region on the 55 km (north-south extent) strip of the Oklahoma panhandle. The study area, by contrast, stretches more than 750 km from north to south.

Applying geostatistical techniques on respondent regions sorted by age group provides evidence of a relationship between age and Dust Bowl vernacular regions. In general, Dust Bowl vernacular regions become more spatially refined and more westward with increasing age. This is best illustrated through the use of the standard distance and standard deviational ellipse calculations. McGrew and Monroe (2000:56) point out that “just as the mean center serves as a locational analog to the mean, standard distance is the equivalent of standard deviation.” Standard distance measures the compactness or dispersion of a point distribution with the value plotted as a circle around the mean center. The circle has a radius equal to the distance value. The calculation of standard distance (Fig. 5) by ArcGIS is accomplished by averaging the distance between the points (e.g., respondent centroids) and the mean center of the distribution (e.g., age-group mean centers). This is accomplished by subtracting the value of the mean x-coordinate from the x-coordinate value for each point and squaring the difference to make the result positive. The same process is applied to the y-coordinates. The differences from the mean are then summed and divided by the number of points in the set. The two resulting values are summed and the square root is determined to return the values to the original distance units. The resulting value is the standard distance (Barber 1988; Mitchell 2005). The greater the standard distance value, the more the distances vary from the average, and the more widely

![Figure 4. Mean area of respondent-defined Dust Bowl regions by age group.](image)

![Figure 5. Calculation of standard distance (SD).](image)
dispersed the features are around the center. In the case of respondent centroids that are distributed regularly around the mean, the standard distance provides a good measure of the compactness of respondent centroids (Mitchell 2005).

In this case, the standard distance steadily decreases with successively older respondent groups (Fig. 6), indicating less variation in polygon placement with increasing age. The standard distances are represented by solid-lined circles. Not only do the standard distances decrease significantly by age, they also migrate west. The age groups’ mean centers, which are also the center of the standard distance circles, illustrate this westward track.

Standard distance does not take into account the possibility that the dispersion of points around the mean center may not be circular, but rather, elliptical. The standard deviational ellipse (Fig. 7) measures both compactness and orientation and subsequently allows for the abstraction of spatial trends in the distribution of points. The standard deviational ellipse yields an elliptical standard distance via separate calculation of the \( x \) and \( y \) axes (Earickson and Harlin 1994). The orientation of the ellipse is determined by ArcGIS to minimize the sum of the squares of the distance and the axes. The ellipse is then rotated by this angle to minimize the distance of the centroids to the axes (Mitchell 2005).

Standard deviational ellipses, illustrated in Figure 6 with dashed lines, show the westward movement but also reflect the transition from nearly circular to elliptical for age-group centroid distribution. State bias has been neutralized as the centroids are grouped by age. The emergence of a north-south axis for point distribution with increasing age is a reflection of more nuanced knowledge about the Dust Bowl by older respondents. Younger respondents are more likely to draw generalized circles, while older respondents attempt to specify more western locales on an elongated north-south axis. These respondents’ regions loosely associate with the High Plains, shortgrass prairie, and more arid climates of the study area. Perhaps their concepts of the vernacular region have been informed not only by historical facts but also by contemporary geographic realities of the region.

**The Respondent-Defined Dust Bowl Region**

Equal interval classification of responses (Fig. 8) provides refined vernacular regions that convey the non-symmetrical nature of cumulative responses better than
Figure 8. Respondent-defined Dust Bowl regions by age (equal interval classification).
the geostatistical measures provided above. The darkest-gray class includes the grid cells that were located within greater than 75% of the hand-drawn regions. The eastern slope of the region is clearly gentler in all age groups. For example, examine the depiction of all respondents along the 37th parallel of north latitude. The first four classes to the east of the core contain 11, 11, 13, and 16 cells while on the western edge these same classes contain six, four, six, and six cells. The “hard” edge in the west can be explained by the presence of a physical feature rather than a political boundary. The Rocky Mountains provide a western barrier that most respondents heeded in drawing their regional boundaries. No physical or political feature presents itself as an obvious point of consensus when it comes to the eastern boundary, resulting in a “softer” edge.

A harder north edge can be noted in the aggregate map. This edge is partially a result of the large number of responses from Kansas, which are generally the most northern and the most homogenous of the state groups. Additionally, there is some relationship between many respondent-defined regional boundaries and the political boundary between Kansas and Nebraska. Disparity in New Mexico and Texas responses largely contributes to the softer southern edge of the region. In contrast to the north, there is not a convenient political border or physical feature upon which to affix the southern boundary of the region.

Like the equal interval classification of age groups, the same technique applied to state groups (Fig. 9) yields an idiosyncratic collection of maps. Broader trends that were suggested by the standard deviational ellipses are illuminated by the regional delineation. Coloradoans stitch their state to Oklahoma, Kansas, and New Mexico in a region centered on Baca County, CO. Kansans overwhelmingly identify the Dust Bowl phenomenon with their state. The Oklahoma core is centered on the Oklahoma panhandle and also displays an elongated east-west axis. Like their neighbors to the north, Texans strongly associate the Dust Bowl with their own panhandle as well as the Oklahoma panhandle.

Cumulatively, the analysis of these respondent-defined regions suggests that people of the study area have spatial understandings of the Dust Bowl that increase in accuracy (as demonstrated by similarity to the academic norms) with increasing age. While aggregate age-group responses highlight the discrepancy in respondent-defined region size (Fig. 4), individual qualitative analysis of respondent regions reveals that the typical region drawn by respondents is not only smaller but more nuanced and less symmetrical with increasing age.

Respondents Name the Dust Bowl States

Analysis of written responses to the questions of Dust Bowl location reveals significant regional bias as well. For example, the non-study-area state of Nebraska was named (not drawn) as a Dust Bowl state by 36% of respondents from Kansas versus 6% from Texas. All (100%) respondents from Colorado named their home state as a Dust Bowl state while only 15% of Texans described Colorado with that term. Conversely, 19% of Coloradoans ascribed the label to Texas compared to 94% of Texans deeming their home state a Dust Bowl state. Oklahoma is not immune to the regional bias with all 20 Oklahoma respondents naming Oklahoma as a Dust Bowl state. Interestingly, Oklahoma’s popularity in this category extends to respondents from all of the states. Oklahoma is ranked first or second for each state group. Its lowest percentage (64%) comes from the Colorado respondents but still ranks second among states for that subsample. Excluding New Mexico, where Oklahoma ranks first, the dominant pattern is for a respondent’s home state to be ranked first and Oklahoma to be ranked second.

A majority of respondents identified Kansas, Oklahoma, and Texas as Dust Bowl states. Colorado, Nebraska, and New Mexico represent a second group of states with some Dust Bowl notoriety to respondents. Nebraska is the only state in this group that falls outside the study area for this research. Its position as the fifth-most popular response can be at least partially explained by its proximity to Kansas and the large number of Kansas respondents that may exhibit a regional bias toward their neighbor to the north.

Local preferences to questions of Dust Bowl location can be further illuminated via portrayal of Dust Bowl state association by county. The following map series (Fig. 10) displays the number of respondents in each of the 93 study counties that named the respective study-area states plus Nebraska as Dust Bowl states. A quick study of the maps illustrates the aforementioned finding that respondents are most likely to name their own state as a Dust Bowl state. To Kansans the Dust Bowl was a Kansas event. This is the case for Texans and Coloradans as well. In fact, three-quarters (73.9%) of respondents named their own state as the state they most closely associate with the Dust Bowl. Oklahoma garners the most widespread support of any of the study-area states, as demonstrated by three and four respondents per county naming the state. Texas, New Mexico, and Colorado have very regionalized distributions of support by comparison. Kansas also has widespread Dust Bowl notoriety, but it
Figure 9. Respondent-defined Dust Bowl regions by state (equal interval classification).
does not collect as many three and four per county rank-
ings outside its home territory. Oklahoma’s central posi-
tion in the Dust Bowl region likely boosted citations as it
accrued the regional bias support of all of the study states
due to its central location.

Regional bias is particularly evident along political
borders. Note the support for Nebraska along the north-
ern Kansas border, the decreasing notoriety of Colorado
by Kansans from west to east and Texans from north to
south, and the recognition of New Mexico from respon-
dents located primarily below 37º north latitude (the New
Mexico-Colorado border). This pattern is less evident in
the Oklahoma map. Oklahoma is also the only state that
received mention in every study county. It was named by
three or four respondents in all but six counties. Perhaps
study-area respondents disproportionately associate Okla-
ahoma with the Dust Bowl as a result of popular cultural
references such as Steinbeck’s *The Grapes of Wrath*, the
Depression-era photographs of Dorothea Lange and Arthur
Rothstein, or the folk music of Woody Guthrie. The im-
portance of these voices on influencing the public memory
should not be overlooked (Cronon 1992; Shindo 1992).

**CONCLUSIONS**

Ask most people about the Dust Bowl and they
can place it in the Middle West, though in the
imagination it wanders widely, from the Rocky
Mountains, through the Great Plains, to Illi-
nois and Indiana. (Cunfer 2004:1)

This systematic sampling of the residents of the region
that has most often been referred to as the historic Dust
Bowl verifies that the notion of a Dust Bowl vernacular
region can wander widely in the imagination of the pub-
ic. Verifying J.B. Jackson’s notion that no landscape or
region can “be exclusively devoted to the fostering of
only one identity” (1984:12), these Dust Bowl regions
both parallel and diverge from academic norms. Because
many subsequent Dust Bowl texts have “borrowed”
the National Archives/Worster maps, there is a strong
consensus among academic texts as to the area gener-
ally defined as the Dust Bowl. The variety of Dust Bowl
regional depictions expands when popular literature,
juvenile texts, and Internet sources are included in the
sample. These sources present Dust Bowl regions that are
striking for their size, as some stretch to the west of the
Rocky Mountains and to both the northern and southern
borders of the United States.

So what does the general public identify as the Dust
Bowl vernacular region? This research has shown that the
people of the historic Dust Bowl region identify with the
academic consensus in terms of the spatial characteristics
of the Dust Bowl. Viewing the respondent-defined region
as a whole, several interesting patterns emerge. Physical
features such as the Rocky Mountains as well as political
boundaries like the Kansas/Nebraska border act as points
of harmony for public geographic perceptions of the
region. This provides an example of the different ways
people can attach environmental meaning to both physi-
cal and cultural landscape elements. Despite this general

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collective agreement, respondents displayed more significant variation when responses are filtered by location and by age.

From a state group perspective, results of this research suggest that people associate the Dust Bowl with the location to which they have the strongest sense of attachment to place. In other words, the Dust Bowl happened where you live. This is interesting in light of the comments that other researchers have made about the overwhelmingly negative connotation of the Dust Bowl (Jordan 1978; Riebsame 1986; Bader 1988; Riney-Kehrbarg 1994). Respondents did not hesitate to associate their respective homelands with this inauspicious event. Many respondents wore their personal or locational Dust Bowl historical experience as a badge of their respective community’s perseverance and steadfastness. Personal state association with a vernacular region has been documented previously by Shortridge (1985) in his work on the vernacular Midwest. It would be interesting to expand this study outside the study area for this project to see at what point Oklahoma, Kansas, or another state moves in front of the home states to be the first choice. It was surprising to see the high number of study-county respondents, however, that failed to name New Mexico or Colorado as Dust Bowl states. Knowing the land-use history and contemporary landscapes of the region, Union County, NM, and Baca County, CO, feel like the heart of the Dust Bowl to these researchers. Perhaps respondents think of Colorado and New Mexico as western mountain states and are not familiar with the High Plains grasslands of the eastern parts of these states. The failure of respondents to identify these counties as part of the Dust Bowl indicates not only limited knowledge of the spatial characteristics of the Dust Bowl but also limited knowledge and/or capacity to consider and synthesize basic geographic characteristics of the greater Dust Bowl region such as topography, soil types, precipitation, and land use.

When the focus turns to age, younger respondents typically provided larger and more generalized hand-drawn Dust Bowl regions. For example, many young respondents identified the Dust Bowl region as being synonymous with the Great Plains and subsequently drew large symmetrical ovals over the central United States for their regional delineation. On the other hand, respondents from the 80 and older group often completed nonsymmetrical maps that were typically much smaller and farther west than the younger groups. This discrepancy speaks to what is perhaps the most significant finding of the research presented here. Young people of the region are significantly less informed about the spatial consider-ations of the Dust Bowl region than are older generations. The decline is steady and dramatic among the four age groups sampled by this research.

This pattern of decreasing spatial knowledge exhibited by successively younger generations mirrors the broader findings of this research that have yet to be reported. The single most important explanatory variable regarding knowledge of the Dust Bowl as region or era or event is indeed age. Another significant and closely related explanatory variable is whether respondents currently know or have known a Dust Bowl survivor. With each passing year it becomes less likely that the young people of the region have informative relationships with Dust Bowl survivors.

The cultural landscape of the Dust Bowl has evolved dramatically throughout the last century as well. The irrigated landscape with its verdant center-pivot irrigation circles provide a very different visual reference for citizens of the region than the epic dust storms of the 1930s and, to a lesser degree, the 1950s. The fact that the older generations have seen this evolution take place, at times violently, speaks to their abilities to describe, map, and understand the phenomenon (Jackson 1984). As Tuan (1977) points out, it can take a long time to know a place. Clearly, older respondents have had more time to develop an intimate knowledge of their surroundings. Additionally, ongoing demographic change in the region may strengthen this pattern. Many counties in the historic Dust Bowl region have witnessed a significant influx of Hispanic persons in recent years (Haverluk and Trautman 2008). Interviews conducted for this research suggest that these new arrivals rarely have knowledge of the Dust Bowl, thus further contributing to the drop-off in knowledge of the human-environment relationship in the region.

Several fundamental questions related to regional inquiry unfortunately remain unanswered. What were respondents’ regional boundaries designed to convey? What anthropogenic and physical variables were respondents utilizing in constructing their Dust Bowl region? As Meinig (1979) stated, “We can gather together and look in the same direction at the same instant, [but] we will not, we cannot, see the same landscape” (33). This problem is a result of the notion that “any landscape is composed not only of what lies before our eyes, but what lies within our heads” (Meinig 1979:34). When combined with Lowenthal’s (1979) assessment of the past as a series of evolving interpretations that are constantly reshaped by the present generation, and Tuan’s (1977:119) recognition that these differences in people’s awareness of space and time lead
to everyone elaborating their “spatio-temporal world” differently, an in-depth understanding of the variables and contexts respondents utilized to construct their on-the-spot respective Dust Bowl regions seems unlikely. In fact, any number of popular and academic sources, along with thematic Dust Bowl education, relationships with survivors, regional nativity, and personal experience can contribute to the formation of Dust Bowl concepts in the minds of respondents. In spite of these issues, the documentation of an eroding knowledge-base regarding what is arguably the United States’ most acute environmental disaster is cause for concern. In spite of the appearance of “conquering geography” in the region (Lewis 1979) by the application of center-pivot irrigation, the region’s documented history of widespread, long-term drought events suggests that it is a merely a matter of time until the next challenge is presented to the human existence on the Great Plains. When the uncertainties of climate change, increasing energy costs, and groundwater depletion are considered as well, one wonders if the residents of the Great Plains can afford not to know their past.

REFERENCES


