
Texas Clovis Fluted Point Survey, 4th Update: Further Insights into the Early Paleoindian Occupation of Texas

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Abstract

It has now been 36 years since the first Texas Clovis Fluted Point Survey was started, and 16 years since its last update. The database of recorded Clovis points has now grown to 804 specimens from 178 Texas counties. The database continues to develop into a productive research tool that addresses questions of the Clovis occupation in Texas. In previous surveys, some regions of Texas displayed a rich Clovis point record whilst others were much more poorly represented. It was previously argued that in certain regions the paucity of Clovis points resulted from poor preservation and/or limited archeological exposure, while in others it may have been due to the lack of Clovis occupation. In addition to updating the overall record, one of the primary aims of the 4th revised edition was to identify Clovis point occurrences from the regions and counties that were previously underrepresented. Raw material variation and the problems of identifying the toolstone had been problematic in previous surveys and are also addressed in this study. The earlier studies reported that there was significant variation in size and use histories, as seen in reworking and breakage patterns, but morphological variation unrelated to technological or raw material constraints appeared to be minimal. In this revised edition, we argue that significant morphological variation is present.

Introduction

After the previous (third) version of the Texas Clovis Fluted Point Survey (TCFPS) was published (Bever and Meltzer 2007), the authors reported there were 544 Clovis points present in Texas from 149 counties. With the current study that total should now be revised to 539 points from 150 counties. This is after an extensive study of the previous survey record sheets revealed several anomalies (Table 1) as explained below in footnotes. After the 2007 survey, additional records were obtained. All the records from the previous surveys (Meltzer 1986a, b; Meltzer and Bever 1995; Bever and Meltzer 2007), as well as the post-2007 records, are now housed at the Texas Archeological Research Laboratory (TARL), which will permanently curate the survey data. These records have now been digitized for ease of use—the record sheets and supporting information was scanned and a single pdf file was generated for each

point. The digital record will be incorporated into the TCFPS database and will eventually be available online on the TARL website via the TCFPS link.

This update, which includes all the records from the post-2007 publication through December 2022, has increased the survey from 539 Clovis point records from 150 counties to 804 points and 178 counties (see Table 1, Figure 1), with the expectation of significantly increasing both tallies in 2023 (Slade n.d. a, b) after these records are processed (Slade this volume). This is quite a significant increase; in fact, it is the biggest increase in any of the previous editions. As with the previous surveys, however, there have not been significant changes in the overall distribution of Clovis points across Texas (Figures 1 and 2).

Nonetheless, several key Clovis sites and collections have been published in the last 10-15 years that have now been added to this survey; these will be discussed in more detailed below. Two of these additions come from Central Texas and represent

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Table 1. Current count of Texas Clovis points by county.

County	Abbreviation	Region	Count	County	Abbreviation	Region	Count
Anderson	AN	East	2	Culberson	CU	Trans-Pecos	1
Andrews	AD	Panhandle/ Plains	6	Dallam	DA	Panhandle/ Plains	4
Angelina	AG	East	20	Dallas	DL	North Central	11
Aransas	AS	Coastal	1	Dawson	DS	Panhandle/ Plains	8
Armstrong	AM	Panhandle/ Plains	1	Deaf Smith	DF	Panhandle/ Plains	1
Atascosa	AT	Southwest	19	Denton	DN	North Central	4
Austin	AU	Central	1	DeWitt	DW	Central	1
Bailey	BA	Panhandle/ Plains	4	Dimmit	DM	Southwest	6
Bandera	BN	Central	1	Donley	DY	Panhandle/ Plains	1
Bastrop	BP	Central	51	Duval	DV	Southwest	1
Baylor	BY	North Central	1	Ellis	EL	Central	3
Bee	BE	Coastal	1	El Paso	EP	Trans-Pecos	2
Bell	BL	Central	54	Erath	ER	Central	5
Bexar	BX	Central	5	Falls	FA	Central	2
Blanco	BC	Blanco	3	Fannin	FN	North Central	1
Borden	BD	Panhandle/ Plains	1	Fayette	FY	Central	4
Bosque	BQ	Central	3	Floyd	FL	Panhandle/ Plains	1
Bowie	BW	East	1	Foard	FD	North Central	2
Brazoria	BO	Coastal	1	Fort Bend	FB	Coastal	2
Brazos	BZ	Central	1	Frio	FR	Southwest	1
Brewster	BS	Trans-Pecos	7	Gaines	GA	Panhandle/ Plains	27
Briscoe	BI	Panhandle/ Plains	8	Galveston	GV	Coastal	1
Brown	BR	Central	7	Garza	GR	Panhandle/ Plains	3
Burleson	BU	Central	1	Gillespie	GL	Central	1
Burnet	BT	Central	2	Goliad	GD	Coastal	2
Calhoun	CL	Coastal	3	Gonzales	GZ	Central	1
Callahan	CA	Central	1	Gray	GY	Panhandle/ Plains	2
Cameron	CF	Coastal	1	Grayson	GS	North Central	1
Camp	CP	East	4	Hall	HL	Panhandle/ Plains	2
Cass	CS	East	2	Hamilton	HM	Central	4
Cherokee	CE	East	1	Hardeman	HX	North Central	3
Childress	CI	Panhandle/ Plains	1	Hardin	HN	Coastal	1
Clay	CY	North Central	1	Harris	HR	Coastal	19
Cochran	CQ	Panhandle/ Plains	1	Harrison	HS	East	8
Coke	CK	Central	4	Hartley	HT	Panhandle/ Plains	1
Collin	COL	North Central	3	Hays	HY	Central	4
Collingsworth	CG	Panhandle/ Plains	1	Henderson	HE	East	4
Comal	CM	Central	2	Hill	HI	Central	13
Comanche	CJ	Central	13	Hockley	HQ	Panhandle/ Plains	3
Concho	CC	Central	1	Hood	HD	Central	1
Cooke	CO	North Central	1	Houston	HO	East	1
Coryell	CV	Central	6	Howard	HW	Panhandle/ Plains	5
Crane	CR	Panhandle/ Plains	1	Hudspeth	HZ	Trans-Pecos	1
Crosby	CB	Panhandle/ Plains	14	Hunt	HU	Central	4

Table 1. Current count of Texas Clovis points by county, cont.

County	Abbreviation	Region	Count	County	Abbreviation	Region	Count
Hutchinson	HC	Panhandle/ Plains	1	Potter	PT	Panhandle/ Plains	3
Jasper	JP	East	12	Presidio	PS	Trans-Pecos	2
Jeff Davis	JD	Trans-Pecos	1	Real	RE	Central	1
Jefferson	JF	Coastal	104	Red River	RR	East	2
Johnson	JN	Central	2	Refugio	RF	Coastal	2
Jones	JS	Central	1	Roberts	RB	Panhandle/ Plains	3
Karnes	KA	Central	2	Robertson	RT	Central	1
Kauffman	KF	North Central	1	Runnels	RN	Central	3
Kendall	KE	Central	3	Sabine	SB	East	2
Kerr	KR	Central	2	San Augustine	SA	East	7
Kimble	KM	Central	1	San Patricio	SP	Coastal	3
King	KG	Panhandle/ Plains	1	San Saba	SS	Central	1
Lamar	LR	East	4	Schleicher	SL	Central	2
Lamb	LA	Panhandle/ Plains	5	Scurry	SC	Panhandle/ Plains	1
Lampasas	LM	Central	18	Shackelford	SF	North Central	1
Lee	LE	Central	5	Shelby	SY	East	1
Leon	LN	Central	1	Smith	SM	East	3
Liberty	LB	Coastal	5	Starr	SR	Southwest	2
Limestone	LT	Central	3	Sutton	SU	Central	1
Live Oak	LK	Southwest	1	Swisher	SW	Panhandle/ Plains	2
Llano	LL	Central	1	Taylor	TA	Central	8
Lubbock	LU	Panhandle/ Plains	3	Terry	TY	Panhandle/ Plains	4
McLennan	ML	Central	6	Titus	TT	East	3
McMullen	MC	Southwest	3	Tom Green	TG	Central	3
Marion	MR	East	4	Travis	TV	Central	6
Martin	MT	Panhandle/ Plains	3	Trinity	TN	East	2
Mason	MS	Central	1	Tyler	TL	East	4
Matagorda	MG	Coastal	1	Upshur	UP	East	1
Medina	ME	Central	3	Uvalde	UV	Central	6
Midland	MD	Panhandle/ Plains	6	Val Verde	VV	Trans-Pecos	4
Milam	MM	Central	2	Van Zandt	VN	East	2
Mills	MI	Central	1	Victoria	VT	Coastal	3
Montague	MU	North Central	1	Walker	WA	East	1
Montgomery	MQ	Coastal	9	Waller	WL	Central	1
Moore	MO	Panhandle/ Plains	6	Ward	WR	Panhandle/ Plains	4
Nacogdoches	NA	East	1	Washington	WT	Central	1
Navarro	NV	Central	3	Webb	WB	Southwest	1
Newton	NW	East	3	Wilbarger	WG	North Central	4
Nolan	NL	Panhandle/ Plains	2	Williamson	WM	Central	5
Oldham	OL	Panhandle/ Plains	2	Wilson	WN	Central	1
Panola	PN	East	1	Winkler	WK	Panhandle/ Plains	2
Parker	PR	North Central	1	Wise	WS	North Central	1
Pecos	PC	Trans-Pecos	1	Wood	WD	East	3
Polk	PK	East	6	Yoakum	YK	Panhandle/ Plains	2

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Table 1. Current count of Texas Clovis points by county, continued.

County	Abbreviation	Region	Count
Zapata	ZP	Southwest	1
Zavala	ZV	Southwest	2
Unknown		Central	2
Unknown		East	1
Unknown		Panhandle/ Plains	3
Unknown		Unknown	1
Total			804

References for the Clovis points, if available, will be held on record at TARL as part of the TCFPS. Certain references for the well documented sites and discoveries can be found in the previous surveys (Meltzer 1986b; Meltzer and Bever 1995; Bever and Meltzer 2007).

Several point tallies in the current survey do not match those from previous surveys, and these anomalies are explained in full in the main text in the footnotes.

more than half of the points from that region recorded in this survey: the points are from the Gault site, including the material from associated locations in Bell County (Williams et al. 2019) and the Hogeye Cache in Bastrop County (Waters and Jennings 2015). In addition, there are points from new archeological sites in the Central, North Central, and Coastal regions (e.g., Crook and Hughston 2008; Crook 2015, 2017a, 2017b, 2019; Crook et al. 2016). Also,

a more intensive review of the material and records previously submitted to the survey from McFaddin Beach in Jefferson County in the Coastal region (Long 1977; Turner and Tanner 1994) was carried out, with resulting data updated (Figure 3).

Much has already been written on the technology, lifeways, and populations of Clovis groups in Texas, based in part on the TCFPS studies (see Bever and Meltzer 2007; Bousman et al. 2004; Collins 2004; Hester 2004; Meltzer 1986a; 1986b; Meltzer and Bever 1995). This article concentrates primarily on bringing the TCFPS up to date with all the post-2007 records that had been sent in, and all the new records that have been previously reported. In the course of updating these data, a number of corrections were made to the tallies from the previous survey.¹ These corrections do not represent any serious errors from the previous surveys, and apart from some points being re-allocated to different counties, the changes do not significantly alter the prior results. The data that follow reflect these corrections. Our goal here is to update the data on the distribution of Clovis points statewide, by region and by county, and to discuss geographic and raw material patterning. A forthcoming study by Slade will use these data to explore in detail patterns in Clovis point life history and morphological variation. We begin with a look at the statewide and regional distribution of Clovis points, to assess geographic patterns, and whether such have changed since the previous three surveys.

¹In the course of this study, Slade carefully vetted the record sheets for points reported in the prior surveys (Meltzer 1986a, b; Meltzer and Bever 1995; Bever and Meltzer 2007), and several anomalies were spotted. Some involved the removal of duplicate records, others the addition of specimens. Specifically, in the 1995 survey six points were recorded for Angelina County, four of these reported as coming from near the Angelina Rivefor (see Brown 1993, 1994). However, the specimens actually came from the bordering San Augustine County. The record has been corrected, which also explains the four extra points now in San Augustine County. A point recorded in the 1995 survey from Brazos County is actually from Waller County. The record sheet entry says that the point was recovered from a gravel bar from the river close to Interstate 10 near the Austin/Wharton County line. These coordinates place the point in Waller County, the first for that county, and not Brazos County. In Coke County one point was used twice, so was dropped, reducing the count from four to three in that county. Two duplicate records were found in Gaines County from the 1995 survey, and after dropping those two records, the Gaines County tally fell from 28 to 26. Also from 1995, a Harris County record was removed. Jefferson County was always going to prove difficult due to the circumstances and inconsistencies surrounding the recording of the points from the McFaddin Beach area. Surprisingly, Slade's review of the record sheets and paper archive that accompanied the survey proved less problematic than expected. After tallying up all the records that were compiled from the previous surveys that should be in the survey and removed the duplicate records, the count was off by just one specimen. The previous surveys calculated 97 (Bever and Meltzer 2007: Table 1), the revised total is 98, and with a further eight added from post-2007 records, the total now is 106. There were a few other duplicate records, but one last revised record deserves mention. The Kincaid Shelter site in Uvalde County (Collins et al. 1989) had a point missing from the survey that has now been included.

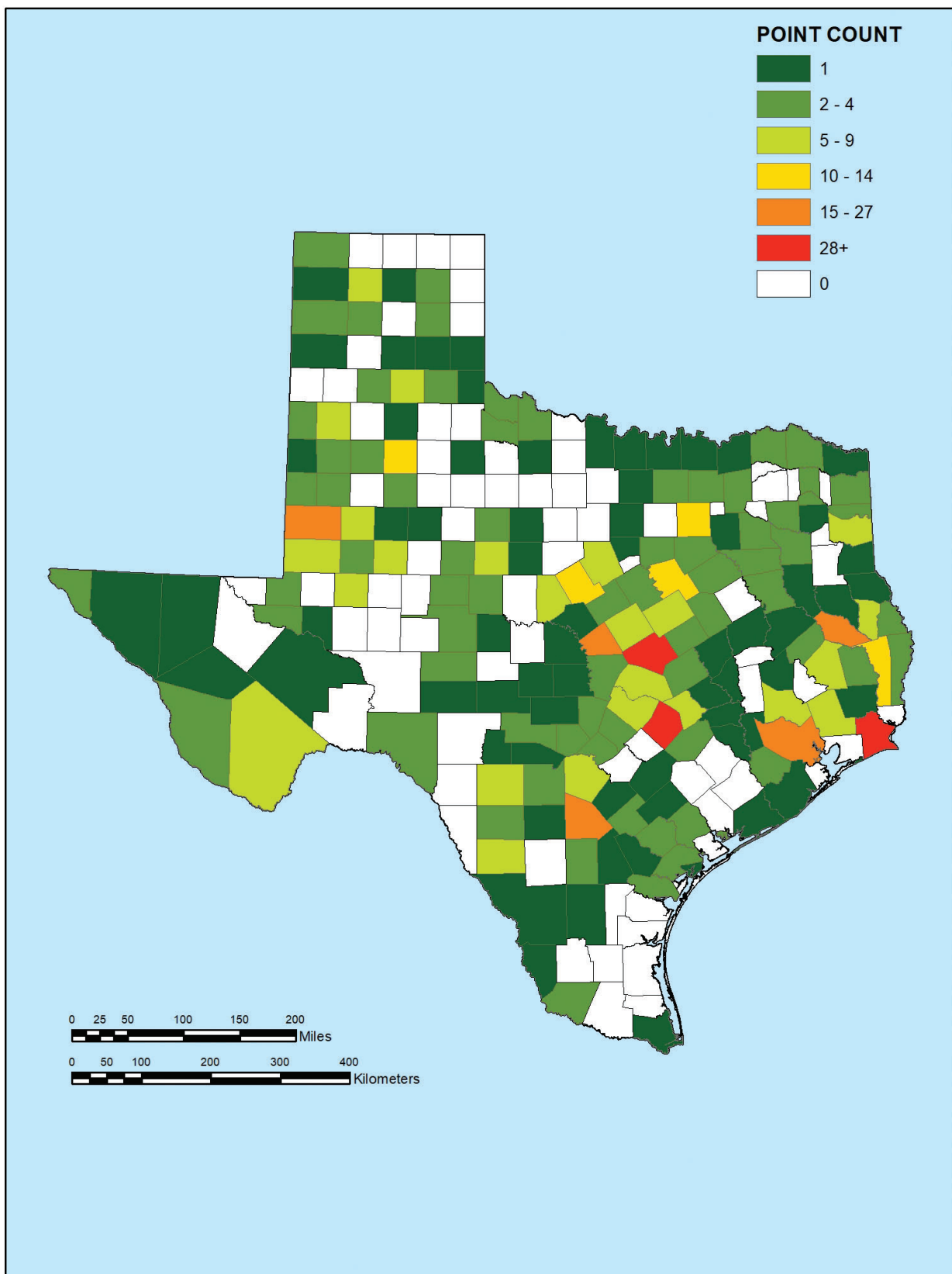


Figure 1. Map of Texas showing the distribution of Clovis points per county.

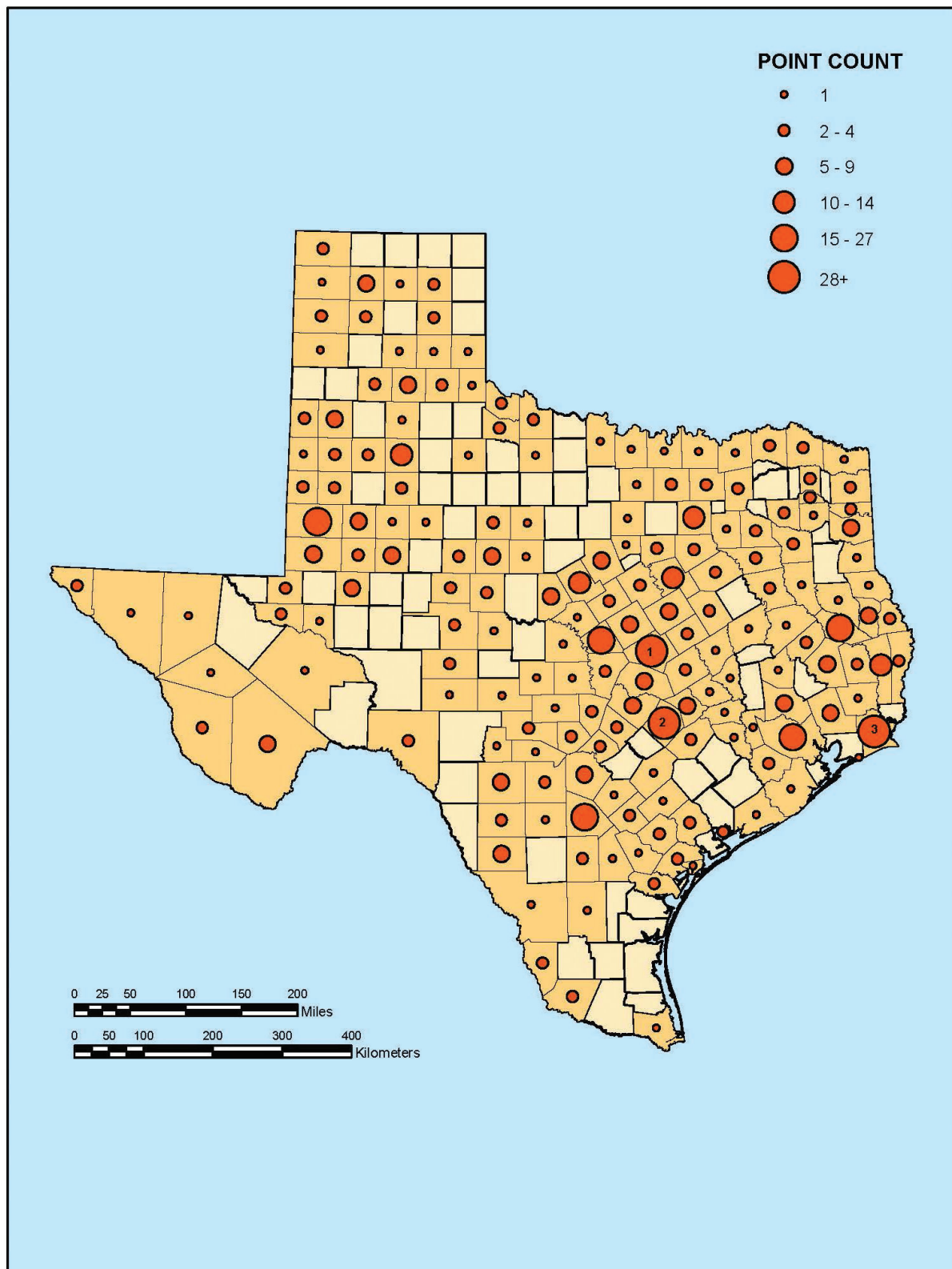


Figure 2. Map of Texas showing Clovis point density per county. The 3 largest circles include: (1) the Gault and Debra Friedkin sites; (2) Hogeye; and (3) McFaddin Beach points.

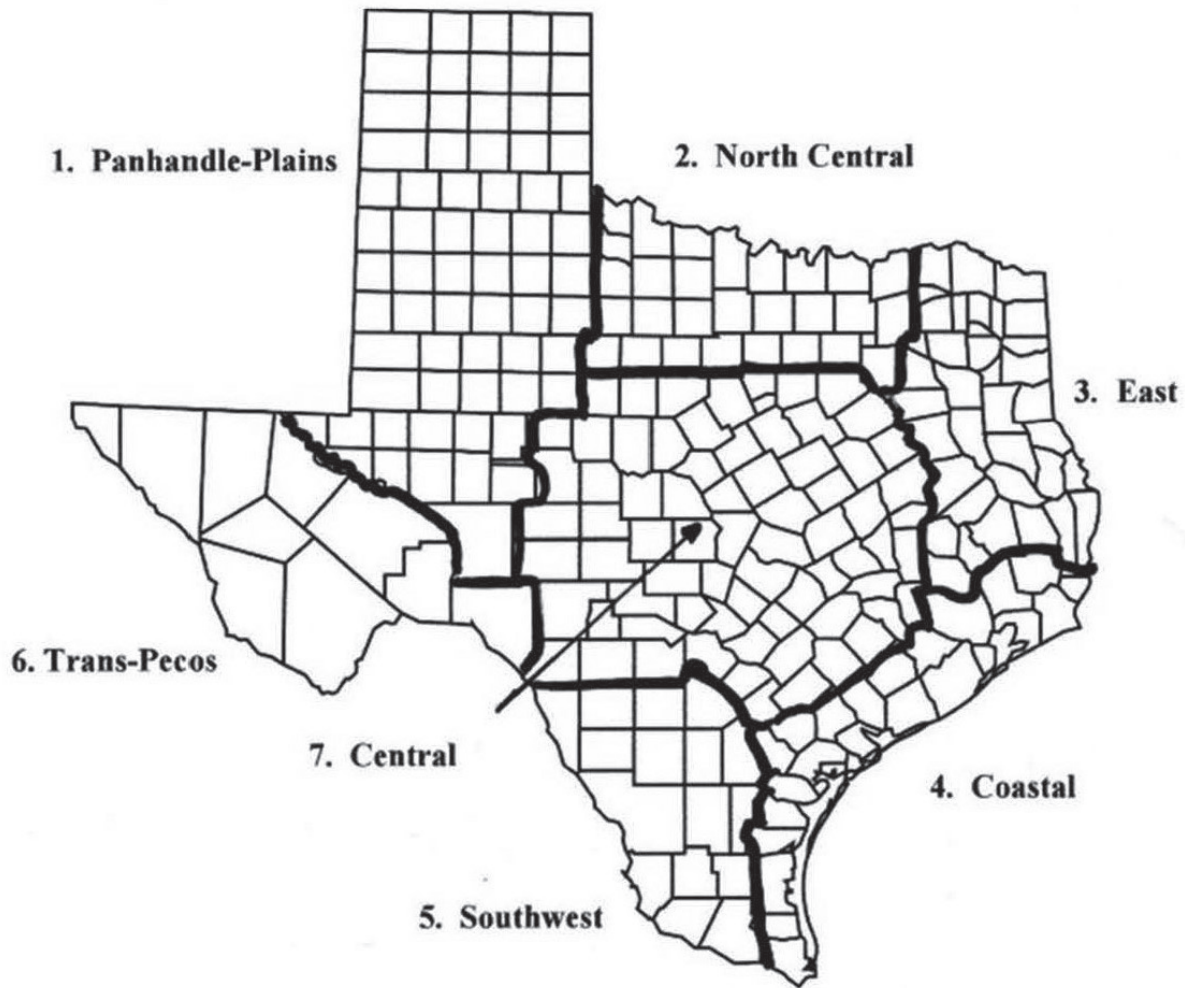


Figure 3. Map of Texas with the seven regions identified (after Bever and Meltzer 2007).

Distribution of Texas Clovis Points

Currently the number of Clovis fluted points in Texas stands at 804, an increase of 265 specimens in the 16 years since the last survey (Bever and Meltzer 2007). There are 178 counties (70 percent) in Texas that now have recorded Clovis points, which is an increase of 28 counties. Bever and Meltzer (2007:70) predicted, based on trends up to that date, that “over the next five or ten years” the number of new counties that reported Clovis points in future surveys would not be large, and probably be significantly less than 21. Given that 16 years have now passed, the current larger increase of 28 new counties is not altogether surprising (Table 2).

In those previous surveys, the majority of the counties that produced Clovis points contained

just one point, oftentimes occurring as a surface isolate. In this survey that trend continues. Of the 28 new counties that reported Clovis points, 16 were counties that had just one point reported, eight counties had two points, and two counties had three. A single county added five points. As of 2007 only five counties reported 10 or more points: Angelina; Crosby; Gaines; Jefferson; and Lampasas but see the corrections in footnote 1. For the current survey (Table 3), there are 13 counties with more than 10 points after combining the data from the previous surveys. Those counties are Atascosa; Bastrop; Bell; Comanche; Dallas; Harris; Hill; and Jasper. In most instances, the increase in specimens were as isolated occurrences. However, in several of those counties (e.g., Bastrop, Bell, Houston), these tallies reflect not a scatter of isolates county wide, but instead

Table 2. Counties (n=28) that now have recorded Clovis occurrences, organized by region.

Region	County	
Panhandle / Plains	Cochran	
	Crane	
	Hutchinson	
	King	
North Central	Clay	
	Collin	
	Wilbarger	
East	Houston	
	Nacogdoches	
	Newton	
	Sabine	
	Trinity	
	Upshur	
Coastal	Goliad	
	Hardin	
	Liberty	
	Matagorda	
	Refugio	
Southwest Trans-Pecos	Culberson	
	Hudspeth	
	Jeff Davis	
	Presidio	
Central	Austin	
	Burleson	
	Karnes	
	Leon	
	Mason	
	Washington	
	Total	28

the spatially-circumscribed occurrence of the points found in a site (e.g., Gault) or a cache (e.g., Hogeys).

Initial observations of the results show a sharp fall in reports from the Panhandle/Plains region, a pattern that seems to follow each previous survey from the 73 that were recorded in the initial survey (Table 4). The largest increase in point occurrences was in the Central region, but if we ignore the two large collections from Bastrop County and the Bell County sites, which account for 94 points, the increase is similar to the previous surveys, and not significant as measured by Freeman-Tukey Deviates (Table 4) (see Avinde and Avidove 2007). With that being said, the two statistically significant increases are in the East and Trans-Pecos regions.

The East region increase, almost twice the count of each previous survey, is largely due to access to one of the largest private collections of Clovis points in Texas (Slade n.d.a.). The statistically significant increase in the Trans-Pecos region was made by re-searching reports from the region and looking for occurrences of Paleoindian material recovered, then looking for a possible Clovis component. The increase was significant as 11 points were reported in this current survey from a previous count of eight, making the new total nineteen, over twice as many from the previous surveys combined. The practice of searching through archeological site reports and surveys will hopefully account for many more Clovis records and will be part of the future research for the TCFPS. There now remain just 76 counties that have no recorded Clovis occurrence (Table 5), of the 254 counties in the state. When organized and analyzed by region, there is a statistically significant decrease in the number of Clovis occurrences in the Panhandle/Plains region. There are no statistically significant changes in any of the other regions, as measured by Freeman-Tukey Deviates (Table 6).

Table 3. Current distribution of Clovis points by county.

	Number of Points										
	0	1	2	3	4	5	6	7	8	9	>10
Number of Counties	76	70	29	25	17	7	9	3	4	1	13

Table 4. Clovis point tally per region per TCFPS survey. Freeman-Tukey Deviates are shown in parentheses in the ‘Current’ column; significant values (± 1.28) are in bold, indicating a larger (+) or smaller (-) than expected change in the tally between 2007 and this survey.

Region	First (1986)	Second (1995)	Third (2007)	Current	Sum
Panhandle / Plains	73	35	28 (2.14)	13 (-2.30)	149
North Central	10	8	5 (-1.17)	14 (1.00)	37
East	23	20	22 (-1.07)	41 (0.94)	106
Coastal	19	73	36 (1.20)	31 (-1.09)	159
Southwest	13	10	3 (-1.32)	11 (1.08)	37
Trans-Pecos	4	2	2 (-1.73)	11 (1.28)	19
Central	61	51	39 (-0.10)	146 (0.16) *	297
Unknown	1	0	0	0	1

* The total of 146 specimens includes the 94 points from the Gault site and the Hogeeye cache. Those specimens were omitted for the calculation of the Freeman-Tukey Deviates; the tally used was 52.

Clovis Occurrences by Region

Panhandle/Plains Region

Previously, it was noted (Bever and Meltzer 2007:75) that the Panhandle/Plains region had a high Clovis point count (see Table 4), with occurrences more common on the Southern High Plains than other areas of the region (see Figure 1). Of the 13 new records reported in this survey, 11 are isolated point occurrences. However, there are two points from a series of localities along Spring Creek, close to the Brazos River. A single point came from Macy Locality-15, a multi-component Paleoindian site (Hurst et al. 2008). The other point is from Macy Locality-10, also a multi-component Paleoindian and Archaic site (Conley et al. 2020; Johnson et al. 2021). It has already been reported (Bever and Meltzer 2007:75) that this region has had a wealth of continuous research projects (see Holliday 1995, 1997), and has some of the most well documented Clovis sites in Texas, such as Miami (Sellards 1952) and Lubbock Lake (Johnson 1983); the Clovis type site, Blackwater Draw Locality 1 (Hester 1972), is also in the same physiographic province across the New Mexico state line. There were four new counties with points added to the region in this survey: Cochran, Crane, Hutchinson, and King (see Table 2). During the late Pleistocene, the region, in particular the Southern High Plains, had more or less permanently flowing

watercourses (Holliday 1997), along with tens of thousands of small pluvial (now playa) lakes (Sabin and Holliday 1995).

Most of the Clovis points in this area are associated with these water sources, which were very attractive to the Clovis groups of hunter-gatherers and the fauna they exploited, as has been well documented (Grayson and Meltzer 2002; Grayson and Meltzer 2015; Haynes 1995; Hester 1972; Holliday 1997; Holliday et al. 1994; Johnson 1987). Due to the region having been studied in depth for so long, it has had a declining Clovis point count since the initial survey in 1986 (Meltzer 1986b) when the tally was 73 (see Table 4).

North Central Region

In previous surveys it was suggested that the relative dearth of Clovis points in this region was due to geological processes that deeply buried deposits of Clovis age, as illustrated by the Aubrey site (41DN479), the surface of which is 8 meters below the present surface (Ferring 2001; Bever and Meltzer 2007:76). There are 14 new reports for this region, two from the Pilot Grove Creek site in Collin County, near Blue Ridge (Crook 2019), and another from the Sonya Mammoth site (41COL267) along the edge of Lake Lavon near Dallas (Crook 2011, 2015). There are also four records from Wilbarger County, from the Pease River area, and this constitutes a new county

Table 5. Texas counties with no recorded Clovis occurrences to date.

Panhandle/Plains	N Central	East	Coastal	Southwest	Trans-Pecos	Central
Carson	Archer	Delta	Jackson	Brooks	Reeves	Caldwell
Castro	Haskell	Eastland	Kenedy	Hidalgo	Terrell	Coleman
Chambers	Jack	Gregg	Kleberg	Jim Hogg		Colorado
Cottle	Knox	Hopkins	Orange	Jim Wells		Edwards
Crockett	Palo Pinto	Morris	Wharton	La Salle		Freestone
Dickens	Rockwall	Rains	Willacy	Maverick		Grimes
Ector	Stephens	Rusk				Guadalupe
Fisher	Tarrant	San Jacinto				Kinney
Franklin	Throckmorton					Lavaca
Glasscock	Young					McCulloch
Hale						Madison
Hansford						Menard
Hemphill						Nueces
Irion						Somervell
Kent						Wichita
Lipscomb						
Loving						
Lynn						
Mitchell						
Motley						
Ochiltree						
Parmer						
Randall						
Reagan						
Sherman						
Sterling						
Stonewall						
Upton						
Wheeler						
29	10	8	6	6	2	15
Total						76

in the database, along with Clay and Collin counties (see Table 2). Two important Clovis sites are present in the North Central region, Aubrey (Ferring 2001) in Denton County, and Lewisville (Crook and Harris 1957) also in Denton County. The Aubrey site is one of the oldest Clovis sites, with a radiocarbon age of $11,570 \pm 70$ years B.P. (CAL BP 13,307 min to 13,473 max) although there has been debate over its antiquity (see Haynes et al. 2007; Waters and Stafford 2007;

Waters et al. 2020). The Lewisville site (41DN72) also had issues of dating, albeit of a greater nature, as the dates originally offered were 37,000 years B.P. (Crook and Harris 1962). The site was reinvestigated in the 1980s (Stanford 1983) and is now dated to around ~11,000 years B.P., (no CAL BP dates available) but the true age of the site may well remain unknown. As in previous surveys, there are occurrences of Clovis points in the eastern part of the region occurring in

Table 6. Regional count of counties that have not reported Clovis points. Freeman-Tukey Deviates are shown in parentheses; significant values (± 1.28) are in bold, indicating a larger (+) or smaller (-) than expected count of counties without recorded Clovis occurrences.

Region	Counties per region	Counties with no Clovis occurrences	% of the Region's counties with no points
Panhandle / Plains	66 (-0.73)	28 (1.32)	42.4
North Central	29 (-0.28)	11 (0.63)	37.9
East	37 (0.43)	8 (-0.69)	21.6
Coastal	24 (0.08)	7 (0.04)	29.1
Southwest	16 (-0.17)	6 (0.48)	37.5
Trans-Pecos	10 (0.32)	2 (-0.33)	20.0
Central	72 (0.73)	14 (-1.34)	19.4
Totals	254	76	29.9

and around the Dallas metropolitan area and in the terraces of the Trinity River (see Smith and Garrett 1991; Calame and Perttula 2021).

East Region

The East region yielded the second highest count of new Clovis points in Texas, with 41 points reported in this survey, and there were six new counties that reported points (see Table 2). There are two archeological sites from these new counties (Perttula and Nelson 2010), the Hickory Creek site in Houston County and the Little Cypress Creek site in Upshur County. Of the remaining specimens, 33 come from two private collections. The Bolton Collection has one Clovis point from Camp County (Turner 2020), and 30 Clovis points from nine counties are from the Harper collection (Slade n.d. a.). It was reported in the last survey (Bever and Meltzer 2007:74) that there were numerous Clovis point isolates that occurred along the North Sulphur River (Bousman and Skinner 2007), and that Angelina County had the highest density of points in the state other than Jefferson County with the McFaddin Beach records. That is no longer the case due to the additional points in Bastrop County (from the Hogeye cache), and Bell County (the Gault site), as well as additional isolates from Gaines County. However,

Angelina County still kept its record by producing a high count of points, nine in this survey (see Table 2), and also after having four records removed due to an erroneous earlier report.

Coastal Region

The Coastal region has a high density of Clovis points (see Table 4), but it should be noted that 104 of the 159 (65.4 percent) points in the region come from the McFaddin Beach area in Jefferson County (Hester et al. 1992; Turner and Tanner 1994). The locale (41JF50) is not so much a single site as a 20-mile stretch of beach that has produced over many decades a huge number of artifacts from many archeological periods (see Long 1977). There were two points that were added to the count for McFaddin Beach in this survey, one that had previously been missed (see Table 1), and one from a private collection now in the Houston Archeological Society Museum collections (Crook 2020). It had been previously suggested (Bever and Meltzer 2007:73) that when the McFaddin Beach count is removed, the Coastal Region has a very low count, which is now no longer the case (see Table 4). Harris County has 10 points in this survey, while six of these are from the Harper private collection (Slade n.d.a.), and the others come from excavated context. The first reported Clovis

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site from Harris County is the Timber Fawn site (41HR1165) on a high terrace south of the East Fork of the San Jacinto River (Crook et al. 2016; Crook 2017a), which yielded three Clovis points. The other is the Galena site (41HR64) which is part of a series of localities comprising a shell midden (41HR61) and nine associated campsites (41HR62-41HR70) near the mouth of Hunting Bayou in Galena Park (Ring 1994; Hester 1980).

There are five new counties in the region that have Clovis points (see Table 2), one of which is a new site. The Wood Springs site (41LB15) in Liberty County (Crook 2017b, c) yielded four points. There are two points from the Hopper's Landing site (41RF10-41RF11) in Refugio County and another two points from Goliad County. A Clovis point from Pete Hill in the Angelina Forest from Hardin County, and one further point from the Matagorda Shell Banks on Matagorda Beach in Matagorda County, all make up the new count from the Coastal region. The latter is in the Harper Collection and was discovered after Hurricane Ike washed it up on the beach in 2008. Though rare, there are some sites that contain Clovis components and have deeply buried fluvial deposits, such as the Johnston-Heller site (41VT15) in Victoria County (Birmingham and Hester 1976; Hester 2004).

*Southwest Region*²

The Southwest region is the only one not to have any new counties in this survey (see Table 6). Of the 12 points that were filed for the region in this survey, eight of them came from the Jenkins site (41AT287) from a sandpit just south of San Antonio in Atascosa County (Calame and Perttula 2023). There are three further Clovis points that are from Atascosa County, one from a family ranch in Somerset, and another from a property near McCoy, supporting the previous suggestion (Meltzer and Bever 1995) that many of the Clovis isolates may be found on private ranch lands that have not had archeological attention. A third point from Pleasanton was found in the TARL collections. Slade is currently carrying out an inventory of the Texas Clovis points housed in the TARL collections, and the point from Pleasanton was one such rediscovery (Slade n.d.b.). There was a Clovis

point discovered in the lower Rio Grande in Zapata County. Further research into this region, and in particular the counties that remain unrepresented by Clovis is warranted, but it remains possible that the scarcity of Clovis points in this region reflects limited Clovis use, rather than a product of limited archeological study or a geological process that obscures the Clovis record (Bever and Meltzer 2007:76).

Trans-Pecos Region

As with the previous surveys, the Trans-Pecos region has the lowest number of points of all the regions (see Table 4), probably not too surprising as the region has the least number of counties (see Figure 1), and most of the region is covered by the Big Bend State and National Parks, which in the absence of development or other projects sees relatively fewer archeological investigations and, of course, prohibits collecting activity. There are nonetheless 11 points recorded in this survey, and from four new counties (see Table 2).

After an extensive literature review of archeological reports and publications in Texas, a Clovis point was found in the collections from Chispa Creek, a well-documented Folsom campsite (41CU415) in Culberson County (Amick and Hofman 1999; Seebach 2004). The excavations were initially carried out in the 1940s and 1950s by Joe Ben Wheat from the University of Colorado on three discrete surface concentrations: 45A5-2, 45A5-6 and 45A5-7. The Clovis point was recovered from 45A5-6 along with over 70 Folsom points. The first Clovis point in Hudspeth County was recovered during a pipeline survey in Padre Canyon (41HZ505) in the 1990s along with four Folsom points (Seebach 2004:118); this point was discovered in the collections at TARL (Slade n.d.b.). In Presidio County, two Clovis points were reported (Roberts et al. 2017) from two separate locations in Big Bend Ranch State Park. The first was from a Paleoindian/Late Archaic campsite (41PS174), and the second from the Jeep Trail Bend site (41PS745). There was another Clovis point discovered in Jeff Davis County, the first for that county too. It is an isolate and was discovered on private property just west of Fort Davis in 2010.

²Previously labelled 'South Texas' (Bever and Meltzer 2007).

As for the other points entered in this survey, there was one point from Elephant Mountain, Brewster County (Mallouf and Seebach 2006; Blecha and Mallouf 2020); there was also another Clovis point from Brewster County from the Harper private collection (Slade n.d.a.). During the aforementioned literature survey, a second point was discovered from El Paso County, a surface find in the desert 30 miles north of El Paso and about 3 miles east of U.S. Hwy 54 (Krone 1976; Miller and Kenmotsu 2004). There was a Clovis point recorded from El Paso County previously (Meltzer and Bever 1995) but it does not resemble this specimen. There are three published points that have been added to the Trans-Pecos region from Val Verde County. The first from Bonfire Shelter (41VV218) is described as a possible Clovis fragment by Michael B. Collins from Bone Bed 2 (<https://www.texasbeyondhistory.net/bonfire/gallery.html>), however, it is described as being Plainview-like in the report (Dibble and Lorrain 1968:Figure 15a).³ A Clovis basal fragment was surface collected from Calaveras Creek just outside Del Rio (41VV1251) in Val Verde County in 1989 (Burkett 1990). Finally, an obsidian Clovis point was reported as coming from the Devils River, near Comstock in Val Verde County (Carroll 1978).

Central Region

There are 146 *new* records reported in the Central region in this survey. Excluding the Gault site (41BL323) in Bell County (n=37), and the Hogeye cache (n=48) in Bastrop County (Waters and Jennings 2015; Williams et al. 2019), the count in the region is still much higher than any other region (see Table 4). Apart from the Gault site, Bell County also had Clovis points reported from other excavated published sites. There was one Clovis point from the de Graffenried biface cache; the cache is believed to come from Gault. The cache is made up of four large oval bifaces and the Clovis point (Collins et al. 2007). At the Debra L. Friedkin site (41BL1239) along Buttermilk Creek, very close to the Gault location (Waters et al. 2018) there were at least seven Clovis points recovered in excavations there. In Bell County, there were

three other Clovis isolates now in private collections recorded in this survey, making the total from Bell County 48. During the most recent literature review, two further Clovis points were discovered from Bastrop County, making the total 50; thus these two counties account for 98 of the 146 from the region (67.1 percent). There was one Clovis point found along the Colorado River near Piney Creek, and the other one is from the Pearce Collection at the University of Pennsylvania Museum in Philadelphia.

There are six new counties that have Clovis point records for this survey (see Table 2). In Austin County, there is one point from the Harper Collection. Burleson County has a point in the Cotton private collection, there is an isolate from Washington County, and another from the Nix collection in Mason County. From Karnes County two surface-collected Clovis were reported from Runge in the eastern part of the county, now in the collections of the Museum of the Coastal Bend, Victoria. There was an excavated Clovis point from Leon County found in a gully along Silver Creek (41LN253) as part of the Jewett Mine Project (Fields et al. 1991). As for other published Clovis points from the region, there were seven points reported from Hill County. There were six from the Ballew site (41HI68) along the Brazos River, and one from the Francis site, 2 miles downstream from Ballew (Watt and Agogino 1968).

Of all the others, the more significant or well-documented sites that reported Clovis points in this survey are documented here. There was an unfluted Clovis point from Horn Shelter (41BQ46) from Shelter No. 2, in Bosque County (Redder 1985). At Kincaid Rockshelter (41UV2) in Uvalde County there is a lanceolate obsidian base from Zone 4 at the site that may be associated with the Clovis component, but given the stratigraphic complications wrought by the ‘treasure hunters’ who dug at the site, and in the absence of definitive Clovis attributes, it cannot be confidently assigned to this period. In Williamson County, the Wilson-Leonard site (41WM235) had a Clovis point from the Clovis component at the site (Collins 1998). Elsewhere in the region there were three Clovis points reported in Comanche County (Calame and Perttula 2021), an interesting broken Clovis point

³Co-author Meltzer views the Bonfire Shelter specimen as Plainview, not Clovis, in agreement with Dibble and Lorrain (1968).

from Coryell County was recovered from a rockshelter (Calame 2008), and a complete unmodified Clovis point was found in Dry Blanket Creek near Zephyr in Brown County (Slade et al. 2019).

Raw Materials and Characteristics of Texas Clovis Points

As was previously noted (see Meltzer 1986b:44-45) an abundance of Clovis point occurrences in lithic-rich areas is not necessarily an indication of high populations of Clovis groups but could instead be a result of repeated visits to the area to acquire stone, among other factors. We address the toolstone types used to produce these points and identify the sources.

Bever and Meltzer (2007) reported that fewer than half of the reported Clovis points could be positively identified to a specific toolstone type and its source. In this survey of 804 points, 353 were classified as unidentified chert (43.9 percent) and 77 as an unknown toolstone type (9.6 percent) (Table 7). Edwards Formation chert was by far the most abundant toolstone present in the survey, as there are 271 records of Clovis points being made of this chert, 148 from the Central region alone. The Edwards Formation region and the associated limestone formations occur over an area about a fifth of the size of all Texas (75,000 square miles) and is considered one of the largest chert-bearing areas in North America (see Banks 1990).

Table 7. Raw material types by region in Texas.

Toolstone Type	Region								Total
	P/P	NC	E	CST	SW	T-P	CTL	UNK	
Agate	1		2	3		3	2		11
Alibates agatized dolomite	24	3		1		1	6	1	36
Boone Chert							1		1
Chalcedony	1	2				3	1		7
Edwards Chert	50	18	17	27	10	1	148		271
Felsite	1								1
Flattop Chert	1								1
Fossilized Palmwood				1		1			2
Gueydan Chert						1			1
Ivory			1						1
Jasper	6		1	1					8
Manning Fused Glass			2						2
Moss Agate	1								1
Obsidian				1		1			2
Petrified Wood	1		6		1		2		10
Quartzite	4	5	4	2	1				16
Rancheria Chert						1			1
Rhyolite						1			1
Sandstone	2								2
Unidentified Chert	47	8	58	106	12	4	117		352
Unknown	11	1	15	17	11	3	19		77
Total	149	37	106	159	37	19	296	1	804

P/P Panhandle/Plains, NC North Central, E East, CST Coastal, SW Southwest, T-P Trans-Pecos, CTL Central and UNK Unknown.

In the last survey, Bever and Meltzer (2007:81) suggested that although the toolstone for over half of the records in the survey were entered as unknown, this did not mean that they were made from an unknown toolstone type. Rather, it was that either the information was not provided, or that it was described but not identified to a particular type. In this survey, there is a distinction between unknown toolstone type, and unidentified chert, where no certainty could be attributed to the toolstone type (see Table 7). It is most likely that a large percentage of the unidentified chert records in the survey are of a variety of Edwards Plateau chert, but they were not identified as such at the time the record was submitted. Of the 271 Clovis points that were classified as being a variety of Edwards chert, only 23 points were given an Edwards chert variety. The most common was Root Beer ($n=11$), Georgetown ($n=4$), Fort Hood ($n=3$), Beeswax, Pedernales ($n=2$ each), and Big Springs ($n=1$). Several attempts have been made to try to source the various types of Edwards chert (Frederick and Ringstaff 1994; Speer 2014), but the results still remain problematic, as it is with trying to source all chert types macroscopically. One fundamental issue in the sourcing of chert is demonstrating that the variability within a source is less than the variability between sources (Shackley 2008), which is especially a challenge with Edwards Formation chert.

The second most abundant toolstone present in the survey is Alibates agatized dolomite (see Table 7). It has its primary outcrop in the Texas panhandle (Schaeffer 1958). The majority of Clovis points made on Alibates are understandably in the Panhandle/Plains region ($n=24$), with only the East and Southwest regions not yet recording any. Jasper makes up the third largest toolstone type ($n=8$); most, if not all occurrences, are of the Tecovas variety, also having its main source in the Texas Panhandle (Quigg et al. 2014). Obsidian ($n=2$) represents the farthest sourced raw material that Texas Clovis points were produced on. As noted, Kincaid Rockshelter (41UV2) yielded the base of an obsidian lanceolate dart point from Zone 4, though its Clovis affinity is not secure. We note, however, that the obsidian has been sourced to an area near Queretaro, Mexico, a distance of more than 620 miles (Hester et al. 1985). In Calhoun County, an obsidian point was recovered from 41CL72 on

Lavaca Beach; the source for this point is believed to come from Washoe County, Nevada (Hester 1988); however, there are similar varieties of this material in Mexico. If the source was indeed in Nevada, the shortest direct-line distance would be 1800 miles, making this one of the longest transported routes of obsidian in Clovis times, and suggests an example of extreme long-distance movement of lithic materials (see Slade 2020:53). However, this could be a trade item that had travelled long distance, rather than a particular raw material that had been brought in. Another obsidian point was recovered from the Devils River, near Comstock, Val Verde County (Carroll 1978; Hester and Mitchell 1974). The trace element analysis failed to identify the source of the obsidian for this point (Hester et al. 1985).

A few other toolstone types were of interest, mainly through them not being from Texas, assuming their source identification(s) are correct. There was a Clovis point from Gaines County believed to be made on Flattop chert. This chert has its closest source in northeastern Colorado (near Sterling) at the Flattop Butte chalcedony/chert quarry (5LO34), a distance of around 650 miles. However, Flattop chert is very similar to varieties of Edwards chert (Macy 2009), including a variant found in Big Spring, Texas. One point from Brazos County was said to be made from Boone chert, from northwest Arkansas/southwest Missouri (Minor 2013). This source would have a direct straight-line distance of around 600 miles. In Hudspeth County, in the Trans-Pecos, a Clovis point was discovered made on Rancheria chert (Seebach 2011:119). This toolstone has sources in southern New Mexico and also the Franklin Mountains in Texas (Carmichael 1986). A Clovis point from Live Oak County is said to be made on Gueydan chert, this toolstone is said to be sourced in eastern Texas (McBride et al. 1968). All the toolstone types that could be identified have been recorded to the best of Slade's knowledge and relies on the individuals that completed the record and submitted the reports (see Table 7).

Summary

In the most recent TCFP survey Bever and Meltzer (2007) summarized the findings by laying out three areas where they thought the survey could encourage more focused research. Those topics are

discussed in brief along with how those questions have and can be addressed:

- (1) *More work could be done with raw material identification and sourcing.*

Every attempt was made to try and identify the toolstone used to produce the Clovis points, going back to the original survey reports and published accounts. Accurate identification of toolstone type and their sources can be problematic (Meltzer 1984) and while every effort was made in this study to achieve a high level of accuracy there will undoubtedly be errors. The identification of the lithic raw materials used by early Paleoindian groups has always been of interest to researchers as a key to discussing the movement and possible exchange/social networks of Clovis groups. Some success was achieved by contacting the authors of certain publications to try to identify the raw materials more accurately, but until it is possible to identify specific cherts and other toolstone types, it will remain problematic.

- (2) *To examine more closely regions in Texas with a scarcity of Clovis points.*

The process of concentrating on regions and counties that are underrepresented by Clovis points was a successful focus of this version of the survey: there were as noted 28 new counties added (see Table 2), and only the Southwest region failed to report any new counties. Further study of the areas where there are fewer points and Clovis sites will be targeted in the next phase(s) of the project. Reaching out to local archeological societies and contacting local collectors in those areas will be a major focus.

- 3) *Achieve a better understanding of Clovis in the East.*

Our understanding of the Eastern region of Texas remains woefully underdeveloped, as it was previously (Bever and Meltzer 2007). Although Clovis points from this region now almost double the tally from the previous surveys (see Table 4), the region still lacks Clovis points found in a stratified context, with a few exceptions, such as the points from Hickory Creek in Houston County, and Little Cypress Creek in Upshur Creek (Perttula and Nelson 2010) [these were not found in stratified contexts]. Both points were found within a multi-component

context. The majority of the other points from the region are isolates: no Clovis site has been excavated. An intensive study of the literature and the private collections in the East Texas region may hopefully lead to the identification of an intact Clovis site.

Finally, one area for future research that will hopefully contribute to the understanding of early Paleoindians in Texas will be the initiation of a Texas Folsom Fluted Point Survey (TFFPS). An attempt was previously made to set up a Folsom point database in Texas (Largent et al. 1991; Largent 1995), but that effort has not been followed up. Doing so would provide a valuable comparison to the TCFPS. It would be interesting to see if there were in the Clovis and Folsom archaeology of Texas similar or different patterns in regional density and distribution, artifact use-life, raw material usage, and so on.

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TEXAS CLOVIS FLUTED POINT SURVEY FORM

Sequence: _____ County: _____
(survey staff only)

Please attach a tracing of the outline (or a photocopy) of both faces of the fluted point. Be sure to show the outline of the flute(s) broken areas, and the extent of edge grinding. If possible, please take measurements in centimeters.

1. Maximum Length	<input type="text"/>	2. Maximum width	<input type="text"/>
3. Width of base	<input type="text"/>	4. Distance from maximum width to base	<input type="text"/>
5. Maximum thickness	<input type="text"/>	6. Distance from maximum thickness to base	<input type="text"/>
7. Maximum flute thickness	<input type="text"/>	8. Basal concavity depth	<input type="text"/>
9. Obverse flute length	<input type="text"/>	10. Obverse flute width	<input type="text"/>
11. Reverse flute length	<input type="text"/>	12. Reverse flute width	<input type="text"/>
13. Number of flute obverse	<input type="text"/>	14. Number of flutes reverse	<input type="text"/>
15. Length of grinding left edge	<input type="text"/>	16. Length of grinding right edge	<input type="text"/>
17. Basal grinding	<input type="checkbox"/> Yes <input type="checkbox"/> No	18. Measurement in	<input type="text"/> cm <input type="text"/> in

19. More detailed information of where and when the point was discovered: _____

20. Artifacts or features found with the point: _____

21. Color and type of stone material: _____

Please print name and address:

Return completed form to:
 Texas Clovis Fluted Point Project (TCFPS)
 Texas Archaeological Research Laboratory University of Texas at Austin
 PRC Building 5, 1010 Burnet Road, Austin, TX 78758
TCFPS@austin.utexas.edu
 (512) 471-5960