CARSON-CONN-SHORT, 40BN190:

A Paleoindian Site in Benton County, Tennessee

Mark R. Norton, John B. Broster, and J. Scott Jones

TN Department of Environment & Conservation

Division of Archaeology
Report of Investigations No. 20
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Tennessee Division of Archaeology • 1216 Foster Ave. • Cole Bldg #3 • Nashville, TN 37243
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This report is dedicated in fond memory of Dr. Dennis J. Stanford:

beloved friend, colleague, and world-class scholar.

Pictured from left to right: Larry Banks, Dennis Stanford, John Broster, Shannon Hafner, and Kit Carson.

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The authors acknowledge the assistance of Sarah Bridges and Ted Kanaski of the United States Department of the Interior, Fish and Wildlife Service in processing our Archaeological Resources Protection Act (ARPA) permits. Thanks to refuge manager John Taylor, and refuge law enforcement officer Jerry Armstrong, for their commitment to protect this significant archaeological resource. We also extend our thanks to Ted Wells at the Tennessee Valley Authority for his permit assistance to continue our site investigations.

Finally, we acknowledge former State Archaeologists Nick Fielder and Mike Moore for their support of this project.

I. INTRODUCTION

In 1988 the Tennessee Division of Archaeology began a statewide Paleoindian projectile point and site survey. The authors visited avocational archaeological societies and described our interest in measuring early projectile points and tools, as well as recording sites throughout the state. The volume of Paleoindian-age artifacts and the hospitality of the avocationals who opened their collections for our research left us overwhelmed. We are especially grateful to the Dickson County Archaeological Society, where we found individuals equally passionate about the Paleoindian occupation of Tennessee.

Harlan "Kit" Carson was one of these individuals who insisted that we take a look at one site in particular, which later became known as Carson-Conn-Short, state site number 40BN190. The site was first visited by the authors in February 1992 with three local amateur archaeologists (Carson along with Gary Conn and Hal Short) that had made a small collection from the site over several years. In talking with them, they explained that there were seven distinct locales (later expanded to nine) in this area that contained Paleoindian projectile points and tools. Mr. Carson had noticed the somewhat centrally located locale, now known as Area A, had produced only Clovis and Cumberland fluted points and related unifacial blade tools (Broster and Norton 1993; Broster et al. 1996; Norton and Broster 2008). The other areas contained Clovis as well as late-Paleoindian projectile points. These gentlemen generously made their collections available for study, and eventually donated these materials to the Division for permanent curation and study.

This report represents the results of archaeological investigations of the Carson-Conn-Short site by the Division between 1992 and 2014. Specific site location data has been withheld to protect this sensitive archaeological resource.

II. ENVIRONMENTAL SETTING

Site 40BN190 is located within the Western Valley physiographic region defined by the northward flowing Tennessee River (Figure 1). The Western Valley is bounded by the Western Highland Rim to the east with elevations averaging 1000 feet, and the Coastal Plain to the west with elevations ranging from 500 to 700 feet (Miller 1974). Numerous tributary streams flow into the Western Valley including the Duck River, located just upstream of the site area. The site is situated on a number of partially flooded terrace ridges located south of the old Pleistocene river channel.

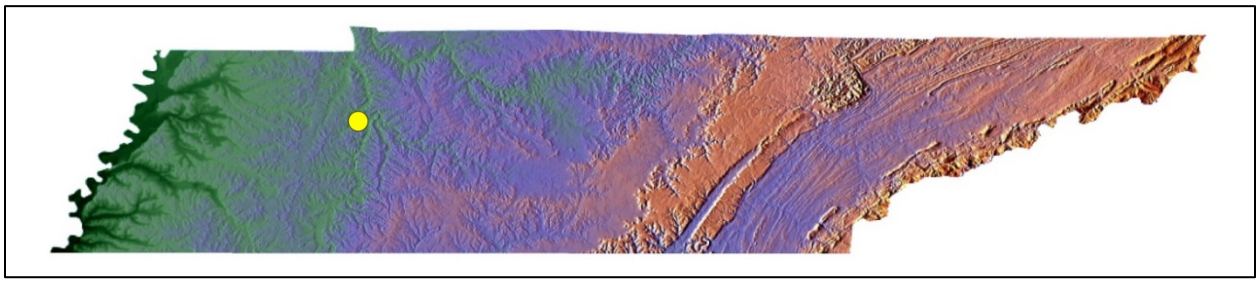


Figure 1. Site 40BN190 location within Western Valley Physiographic Province (after Miller 1974).

Geology

The lower elevations of the Western Valley are covered with quaternary age alluvium deposited by the Tennessee River. Upper elevations are comprised of Mississippian age Fort Payne limestone deposits containing bedded chert. Older Devonian age Limestone outcrops are found sporadically throughout the region and contain a white to gray Camden chert. These Devonian age deposits are only exposed during winter pool when Kentucky Lake is drawn down below 355 feet AMSL. The geomorphology of the site locality is described as swale and levee topography.

Soils

Soils within the first terraces and low bottoms along the Tennessee River are comprised of the Huntingdon- Engam-Wolftever series. Natural levees and low ridges, as well as swales and sloughs typically parallel the river. Soils within the site area are predominately comprised of reddish-brown silty clay loam of the Wolftever soil type (Odom et al. 1953).

Climate

The climate of Benton County has been described as humid continental, which is typified by mild winters and hot summers (Odom et al. 1953). The Tennessee River slightly influences variation in temperatures as compared to other portions of the county. The average annual rainfall for Benton county is 50 inches.

Flora and Fauna

This portion of Benton County lies within the Carolinian Biotic Province, which is characterized by diverse species of hardwood forest, including oak-hickory, beech-maple, and mixed Mesophytic forest (Braun 1950). Slopes and ravines contain beech, sugar maple, white oak, tulip tree, and hickory. The higher elevations and ridgetops are dominated by black oak, chestnut oak, blackjack oak, hickory, post oak, and are void of white oak (Braun 1950).

Diverse habitat can be found throughout the Tennessee River Valley providing an excellent habitat for faunal species. United States Fish and Wildlife Service (USFWS) biologists have conducted modern counts that include 51 mammal species, 144 species of fish, 89 species of reptiles and amphibians, and over 300 species of birds (USFWS 2001). Faunal species found here include the red and gray wolf, eastern cougar, elk, white-tailed deer, black bear, raccoon, opossum, cottontail rabbit, fox, bobcat, beaver, otter, mink, and gray and fox squirrel (Dice 1943).

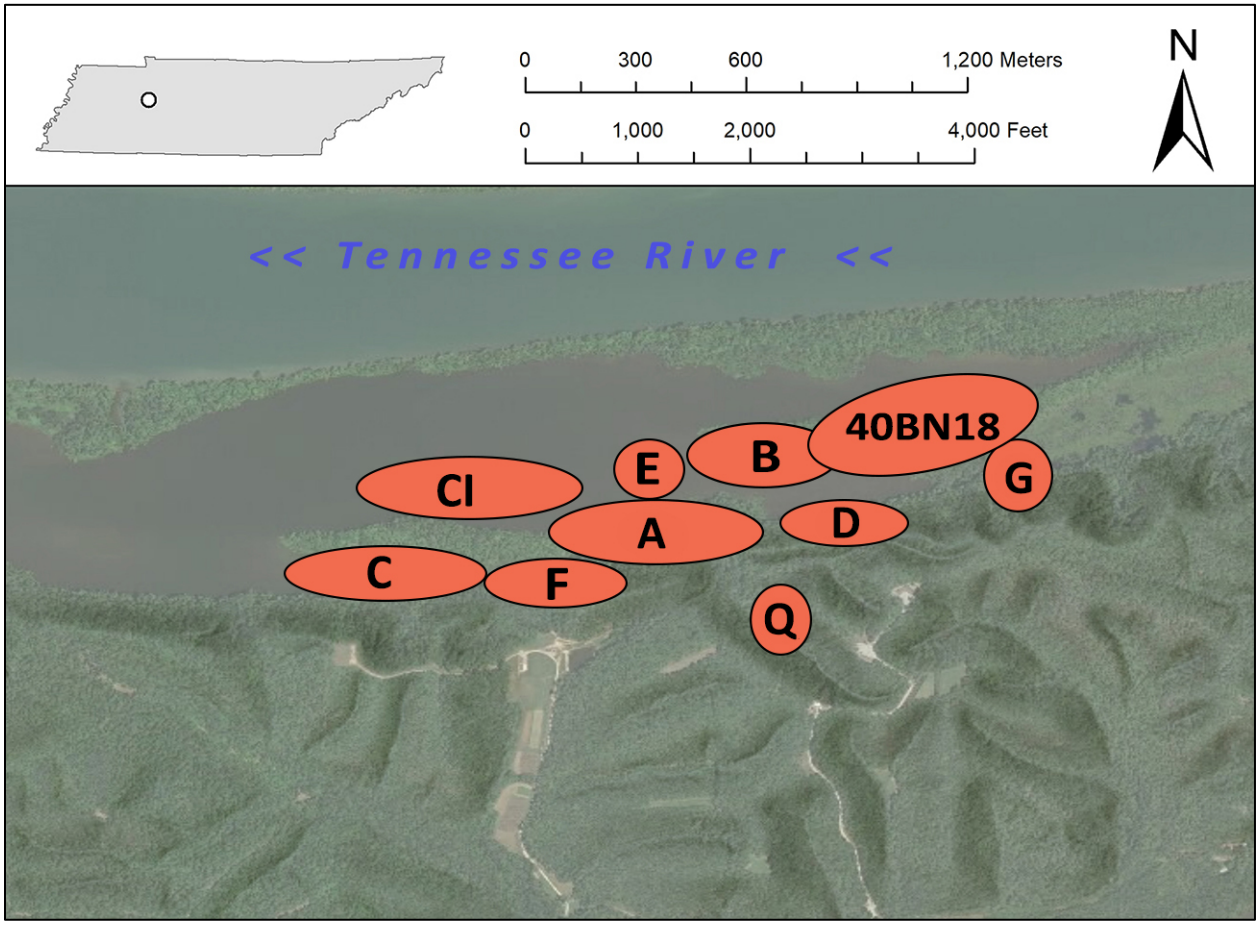


Figure 2. 40BN190 localities. Areas C and F are within site 40BN65 boundaries. 40BN18 is located east of Area B along same levee.

III. FIELD INVESTIGATIONS

The site's location within a Federal Wildlife Refuge prompted the completion of an Archaeological Resource Protection Act (ARPA) permit obtained through the US Department of the Interior (No. 04-TN-2-92).

Nine distinct locales containing Paleoindian projectile points, blade tools, and blade cores were identified (Figure 2). Surface collections within each of these areas were periodically made when the water levels of Kentucky Lake were low enough. Test units (1x1 meter) were also initiated in each area, and later expanded upon finding Paleoindian age tools or intact deposits. This section presents surface collections, point provenience maps, test units, and future recommendations for each area of concentration.

Area A

Since Mr. Carson informed us that only fluted projectile points had been found in the central locale, we designated this location as Area A and began our investigations there. Two strategies were proposed for the investigation of Area A: (1) surface mapping of exposed tools and fluted points to assess spatial relationships of artifacts to each other as well as numerous fire-cracked chert features on the beach; and (2) test for intact deposits. A concrete monument was set as Datum A with other datum points established for mapping purposes.

Piece-plot Survey

Artifacts were mapped in relation to set datum points as well as test units and exposed features. Piece-plotting was concentrated on the beach margin of the peninsular-like landform (Figure 3). Given the high density of small artifacts and angular debris throughout the area, piece plotting was biased towards formal tools (Figure 4). However, the number of artifacts mapped along with features provided an opportunity to evaluate site structure and activity organization within Carson-Conn-Short.

Most areas at the site were mapped with a surveyor's transit and tape. We were fortunate to have the assistance from Dennis Stanford, Peggy Jodry, and Bob Estes of the Smithsonian Institution. Mr. Estes operated a total station transit for the majority of artifact locations mapped in Area A and Cumberland Island (Figure 5), and he also produced an Area A topographic map of datum and test unit locations (see Figure 3). Area A was the largest area to be piece-plotted with over 500 artifacts on the beach margin and in test unit excavations (Table 1; Figures 6-14). Four features were also identified and mapped along the beach area.

The point provenience map of Area A shows blades and blade cores throughout with a slight concentration in the central portion of the site of both fluted and non-fluted bifacial preforms (see Figures 6-8; Appendix A). It was difficult to discern distinct activity work areas other than the centrally located biface/preforms, possibly the result of artifact collection by avocational archaeologists.

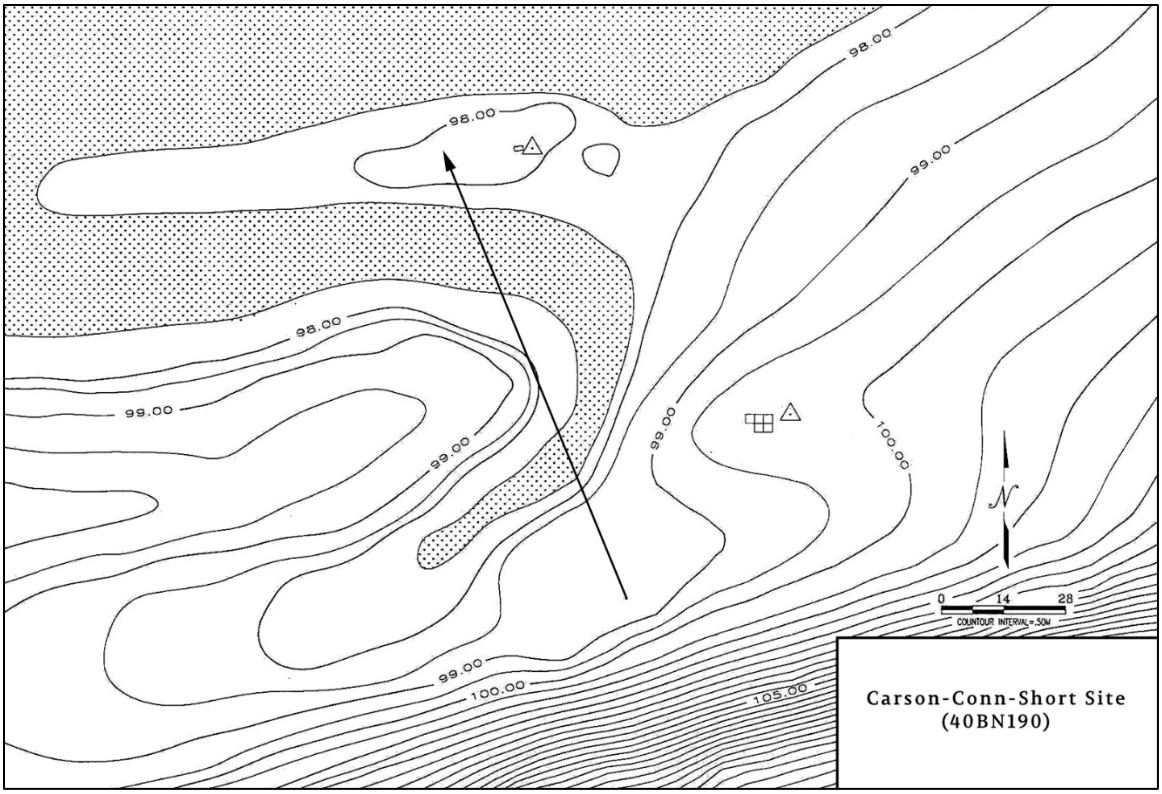


Figure 3. Topographic map of Area A and location of piece-plot survey of the lower beach area.

Figure 4. Pin flags marking formal artifacts mapped within Area A.

Figure 5. John Broster (left) and Bob Estes (right) piece-plotting artifacts within the lower beach portion of Area A.

Table 1. Artifacts Recovered from Area A.

Category	**Number**
Clovis PPKs	18
Clovis Knives	14
Early Clovis preforms	256
Late Clovis preforms	359
Cumberland PPKs	6
Unfluted Cumberland	3
Beaver Lake PPKs	8
Quad PPKs	7
Overshot flakes	103
Channel flakes	16
Endscrapers	149
Spurred Endscrapers	36
Sidescrapers	349
Blade knives	252
Gravers	61
Spokeshaves	15
Denticulates	14
Retouched flakes	82
Sandstone abrader	4
Hammerstones	28
Blades	627
Blade cores	157
Core tablet flakes	19
Block cores	40
Total	2623

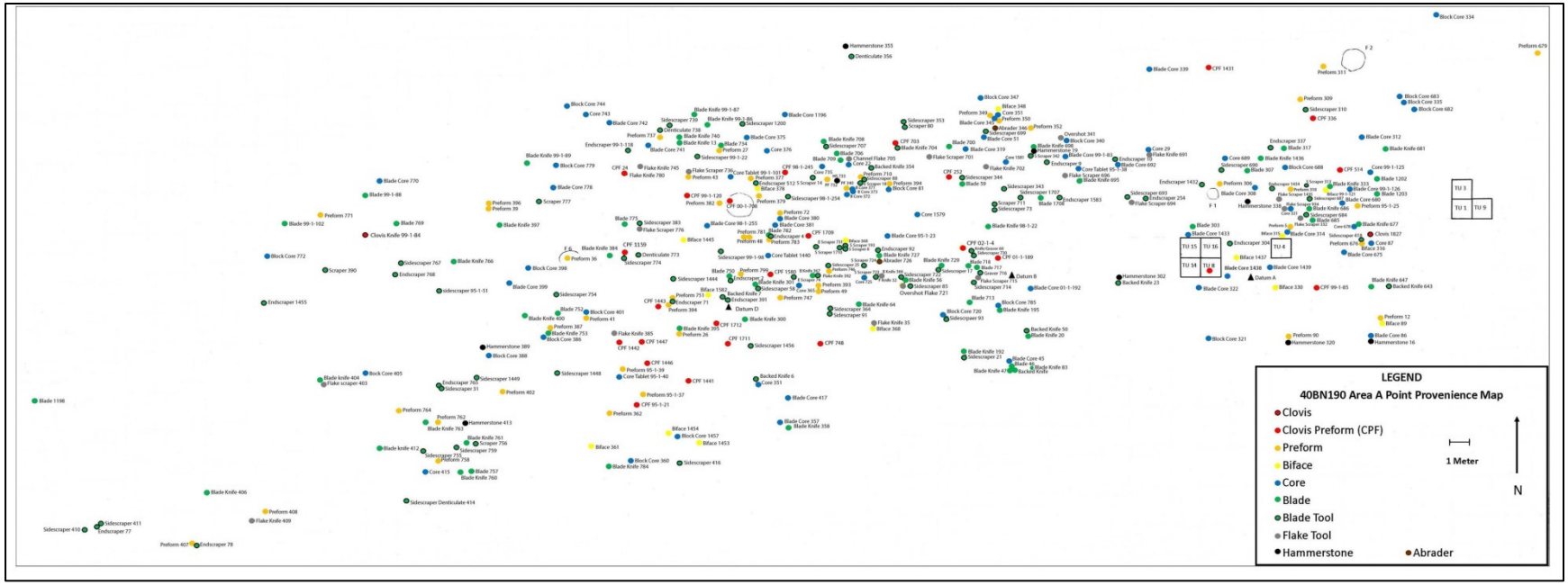


Figure 6. Point provenience map of Area A (see Appendix A). Close-up views are displayed in Figures 7 and 8.

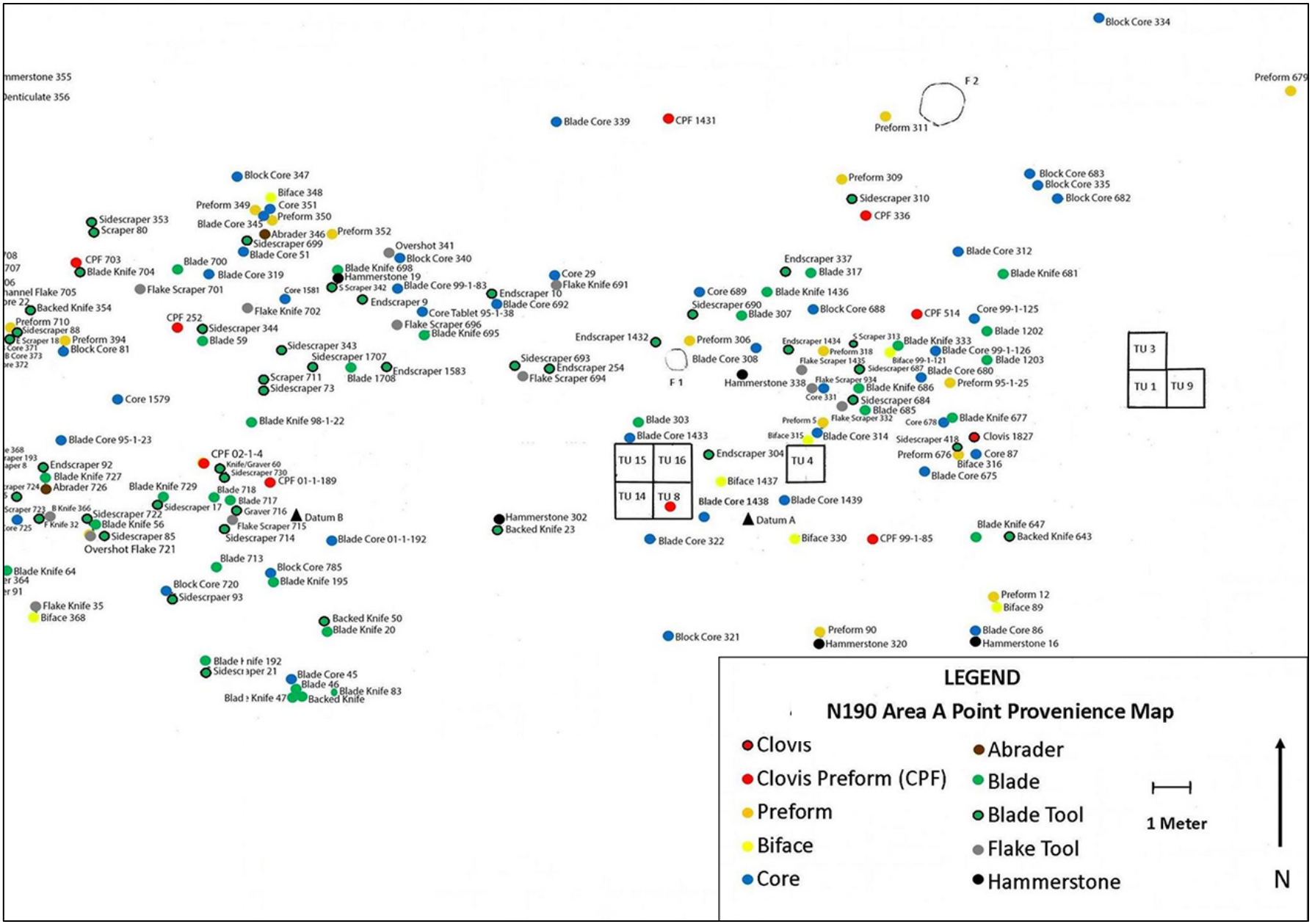


Figure 7. Point provenience map of Area A, east section (see Appendix A).

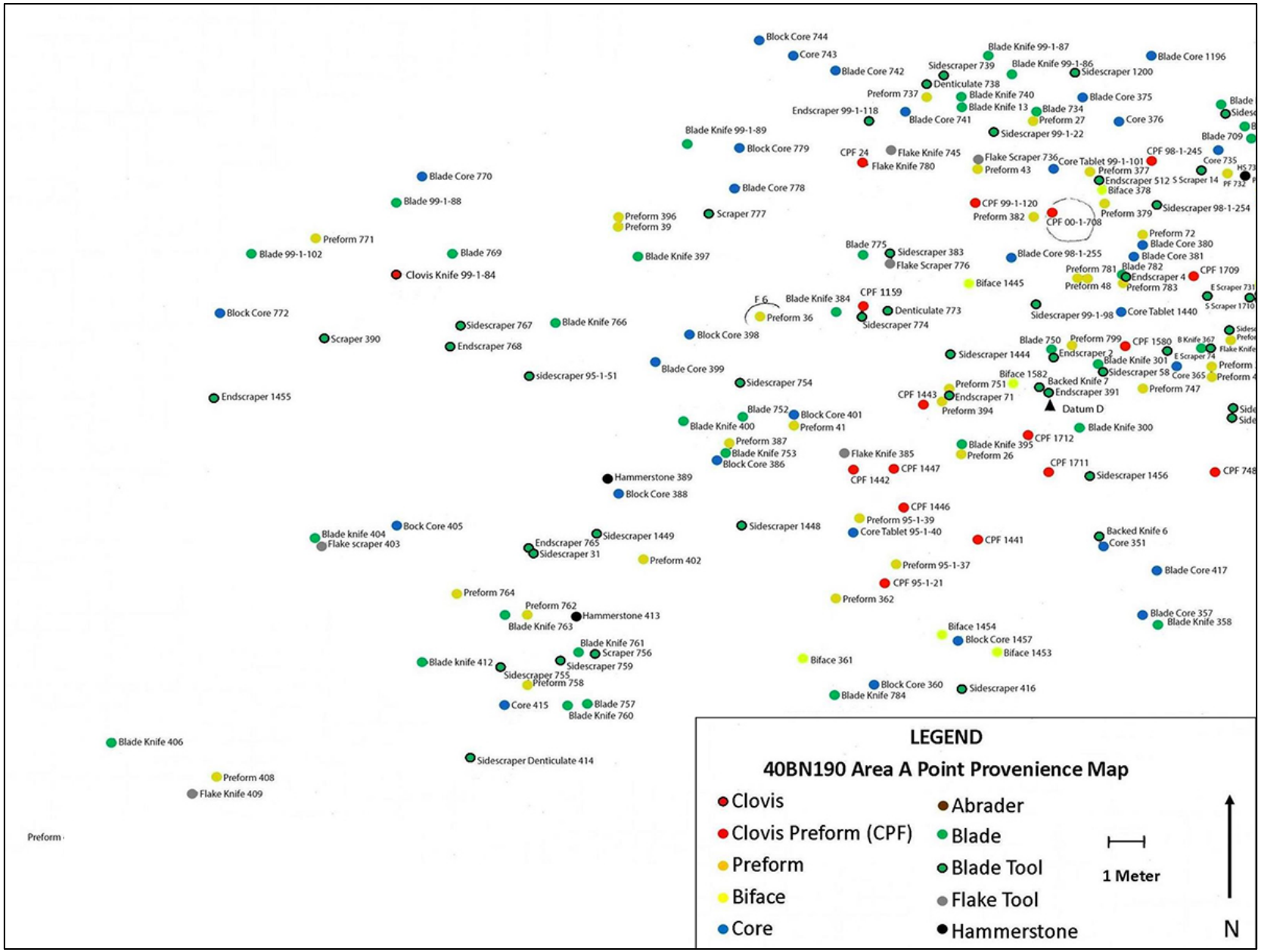


Figure 8. Point provenience map of Area A, west section (see Appendix A).

Figure 9. Select late Paleoindian projectile points and Clovis preforms recovered from Area A.

Figure 10. Select blade tools recovered from Area A.

Figure 11. Select endscrapers recovered from Area A.

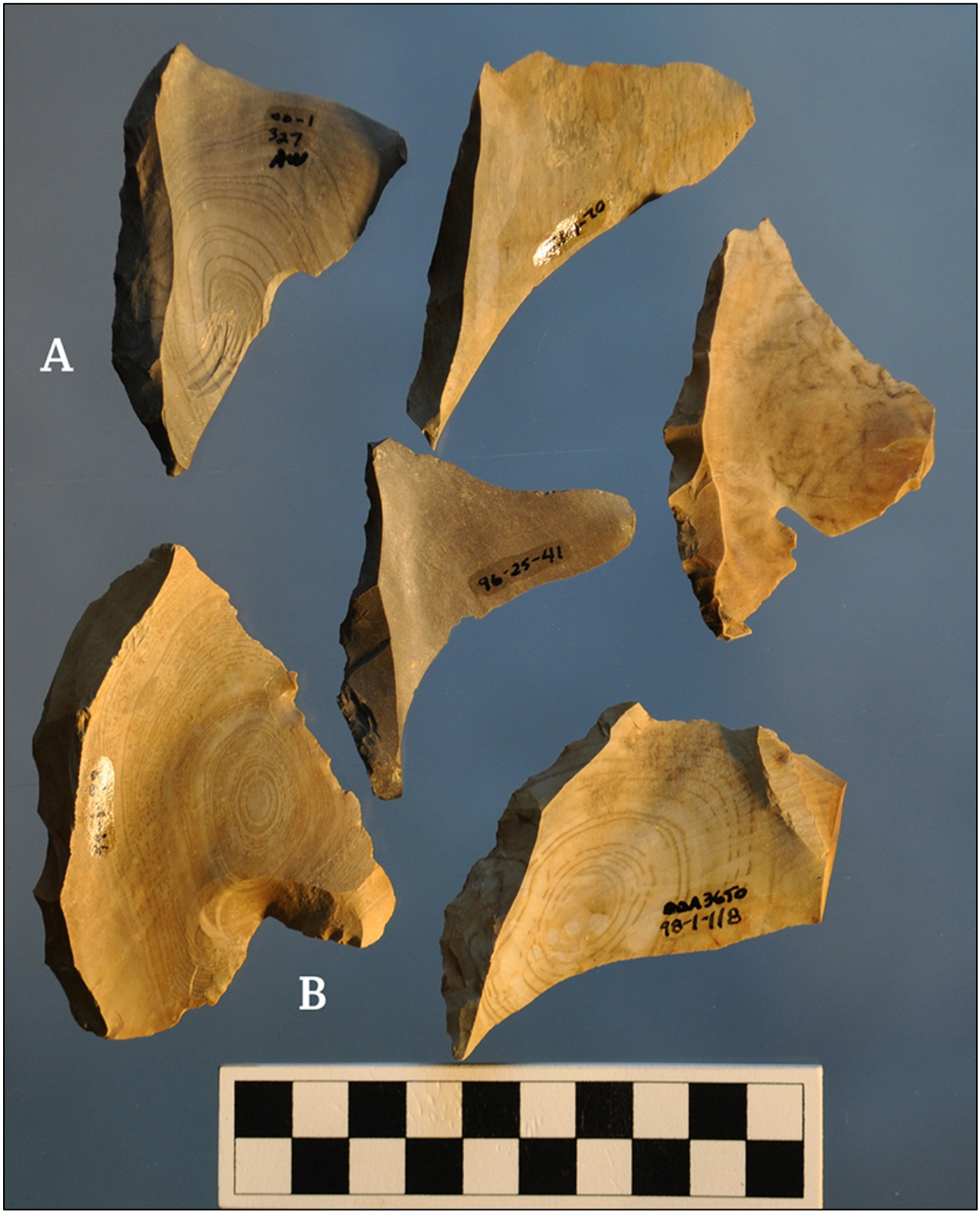


Figure 12. Sample of overshot flakes recovered from Area A: (A) detached from late stage preforms; (b) detached from early stage preforms.

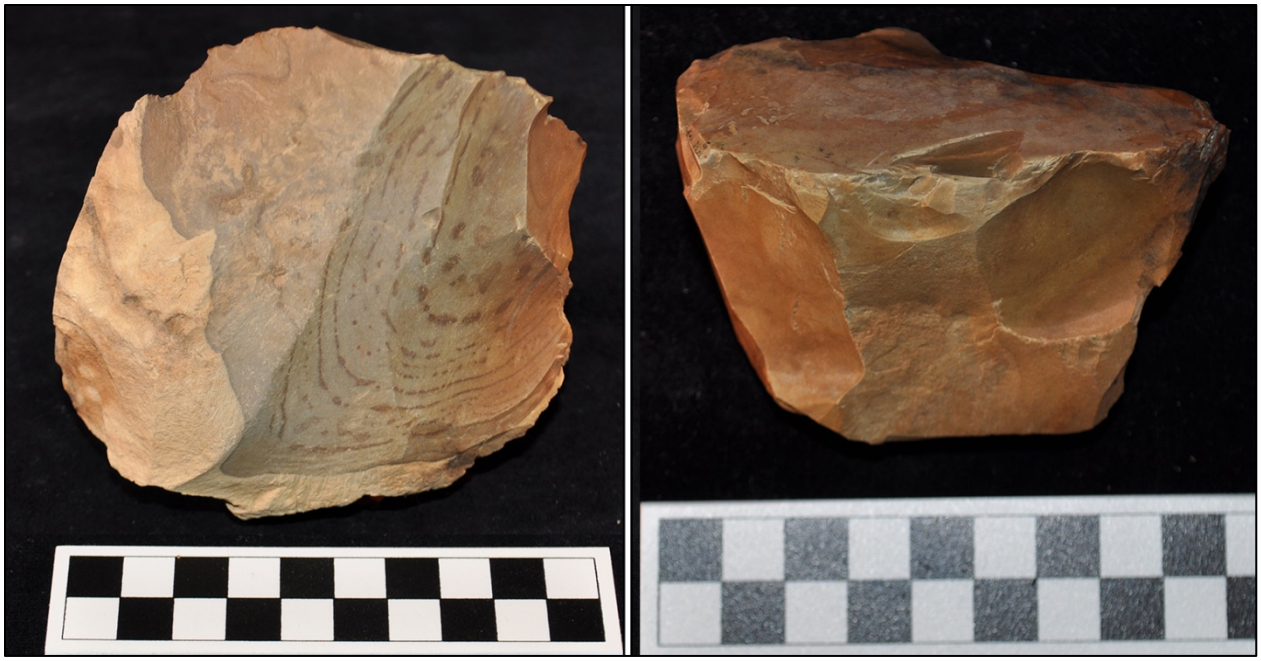


Figure 13. Select cores recovered from Area A.

Figure 14. Agate artifacts recovered from Area A.

Test Unit Descriptions

Ten test units were excavated in Area A (1, 3, 4, 8, 9, 11, 12, 13, 14, and 16). Excavations were conducted in natural levels where possible, or arbitrary levels within natural levels. Test units were hand/trowel excavated, with tools and diagnostic artifacts mapped as possible. Soils were screened through ¼" mesh with all artifacts collected. Test unit descriptions are provided below.

Test Unit 1

Test unit 1 was a 1x1 meter unit that produced three strata of deposits (Figures 15-16; Tables 2-3). Level 1 contained modern organic materials mixed at the bottom (9.5 to 13.5 cmbs) with fire-cracked chert, flakes, and 11 prismatic blade segments. The second level was comprised of reddish-brown silty clay loam of the Wolftever soil type (Odom et al. 1953). Fire-cracked debris, flakes, one probable Clovis projectile point distal, and nine prismatic blade sections were recorded in this level. The third and final level was split into two arbitrary sublevels in the field, but has been collapsed here for analytical purposes/ The soil was hard-packed, reddish-gray silty clay also of the Wolftever soil type. Recovered artifacts included flakes, eight uniface sidescrapers, 38 prismatic blade fragments, and two channel flakes. Small bits of charcoal and one burnt bone fragment were also present in this level.

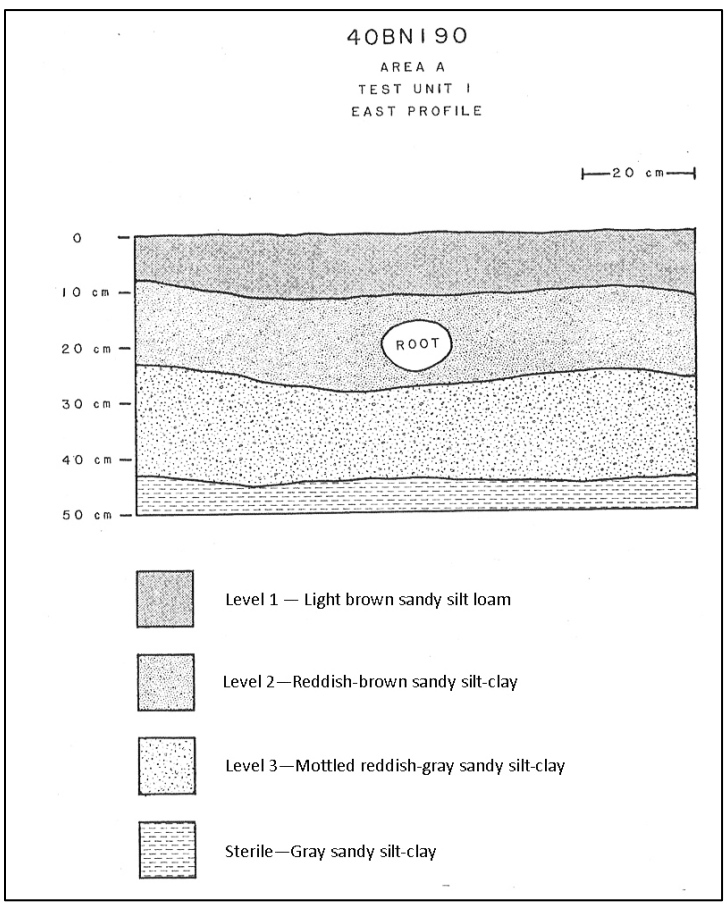


Figure 15. Test Unit 1, east profile.

Figure 16. Test Unit 1, Level 3, north wall.

Table 2. Test Unit 1 Levels.

Level	Depth (cm below surface)				Description
	SW	NW	NE	SE	
1	9.5	11	13.5	12	Light to medium reddish brown sandy silt-clay
2	15	17	19	18	reddish brown sandy silt-clay
3	37	43	47	38.5	Very compact mottled reddish gray sandy silt-clay

Table 3. Artifacts Recovered from Test Unit 1.

Category	Level 1	Level 2	Level 3	Totals
Clovis PPKs	0	0	0	0
Clovis Knives	0	0	0	0
Clovis Preforms	0	0	1	1
Biface/preform	0	0	0	0
Channel Flake	0	0	2	2
Adze	0	0	0	0
Endscrapers	0	0	1	1
Spurred Endscrapers	0	0	0	0
Sidescrapers	0	0	2	2
Blade Knives	1	0	2	3
Flake Tools	1	10	8	19
Hammerstones	0	0	0	0
Gravers	0	1	2	3
Spokeshaves	0	3	0	3
Denticulates	0	0	0	0
Blades	8	9	32	49
Blade Cores	0	0	0	0
Block Cores	0	1	2	3
Core Planes	0	0	0	0
Core Tablets	0	0	0	0
Primary Flakes	2	2	7	11
Secondary Flakes	5	4	24	33
Tertiary Flakes	77	44	178	299
Totals	94	74	261	429

Test Unit 2

Test unit 2 was a 1x1 meter square excavated in two levels (Tables 4-5 ; Figure 17). Level 1, excavated to a maximum depth of 10 cmbs, consisted of brown humic topsoil. Level 2 comprised reddish/orange clay excavated to a maximum depth of 17 cmbs. A modest number of artifacts were recovered in the uppermost part of this level.

Table 4. Test Unit 2 Levels.

Level	Depth (cm below surface)				Description
	SW	NW	NE	SE	
1	6	8.5	10	7.5	Brown humic zone
2	17	12	13	15	Reddish/orange clay

Table 5. Artifacts Recovered from Test Unit 2.

Category	Level 1	Level 2	Totals
Clovis PPKs	0	0	0
Clovis Knives	0	0	0
Clovis Preforms	0	0	0
Biface/preform	0	0	0
Channel Flake	0	0	0
Adze	0	0	0
Endscrapers	0	0	0
Spurred Endscrapers	0	0	0
Sidescrapers	0	0	0
Blade Knives	0	2	2
Flake Tools	0	0	0
Hammerstones	0	0	0
Gravers	0	0	0
Spokeshaves	0	0	0
Denticulates	0	0	0
Blades	0	0	0
Blade Cores	0	0	0
Block Cores	0	0	0
Core Planes	0	0	0
Core Tablets	0	0	0
Primary Flakes	0	0	0
Secondary Flakes	0	5	5
Tertiary Flakes	0	20	20
Totals	0	27	27

Figure 17. Test Unit 2, Level 2.

Test Unit 3

Test Unit 3 comprised a 1x1 meter unit excavated in three natural levels to a maximum depth of 65 cmbs (Tables 6-7; Figures 18-20). Level 1 consisted of a medium brown sandy silt-loam. A moderate density of artifacts as well as a concentration of fire altered material in the northwest corner of the unit was observed. Level 2 consisted of a light reddish-brown silt loam. Artifact density was moderate to light. A keeled endscraper and block core were recovered from this level. Level 3 consisted of reddish brown clay silt underlain by a sterile reddish orange clay. Level 3 extended 67 cm below surface and consisted of a single natural level with a moderate amount of chert debitage, sandstone, and red ochre fragment. Over 1000 artifacts (*n*=1090) were recovered from Test Unit 3 including numerous blades and blade tools (see Figure 20). Levels 2 and 3 are considered to be intact deposits from the Late Pleistocene occupation of the area.

Table 6. Test Unit 3 Levels.

Level	**Depth (cm below surface)**				**Description**
	SW	NW	NE	SE	
1	8	6	6	7	medium brown sandy silt loam
2	16	15	20	20	light reddish brown silty loam
3	65	65	67	65	reddish brown clay silt underlain by sterile reddish orange clay.

Table 7. Artifacts Recovered from Test Unit 3.

Category	**Level 1**	**Level 2**	**Level 3**	**Totals**
Clovis PPKs	0	0	0	0
Clovis Knives	0	0	0	0
Clovis Preforms	0	0	0	0
Biface/preform	0	0	0	0
Channel Flake	2	0	0	0
Adze	0	0	0	0
Endscrapers	0	0	0	0
Spurred Endscrapers	0	1	0	0
Sidescrapers	0	0	0	0
Blade Knives	1	3	5	5
Flake Tools	0	1	17	17
Hammerstones	0	0	1	1
Gravers	0	0	1	1
Spokeshaves	0	0	0	0
Denticulates	0	0	0	0
Blades	24	24	63	63
Blade Cores	0	0	0	0
Block Cores	0	2	0	0
Core Planes	0	0	0	0
Core Tablets	0	0	0	0
Primary Flakes	2	2	6	6
Secondary Flakes	9	14	31	31
Tertiary Flakes	202	131	548	548
Totals	**240**	178	672	2090

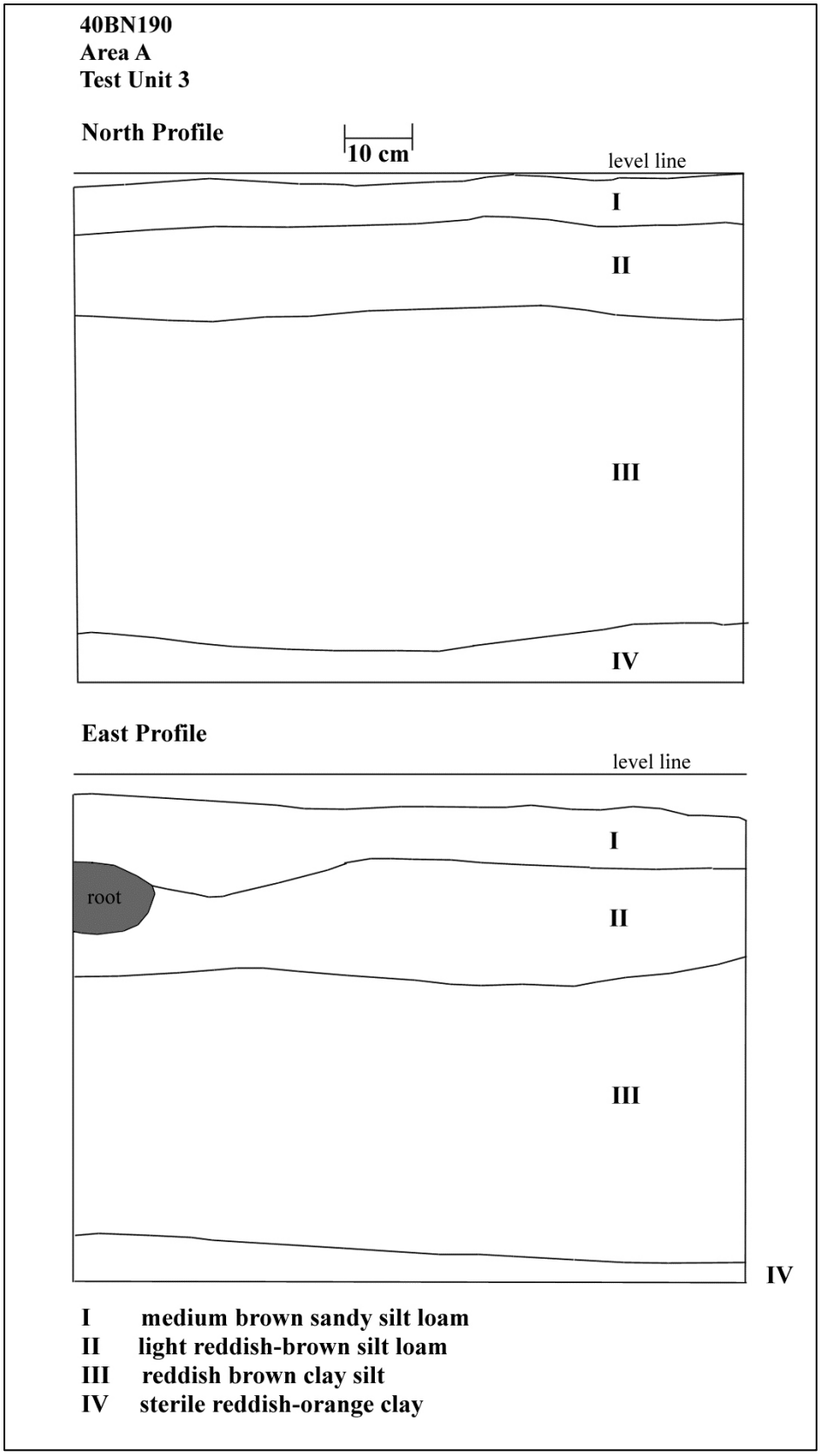


Figure 18. Test Unit 3, north and east profiles.

Figure 19. Test Unit 3, Level 3, west profile.

Figure 20. Blades recovered from Test Unit 3.

Test Unit 4

Test Unit 4 was a 1x1 meter unit excavated to a maximum depth of 22 cmbs in two levels (Figure 21, Tables 8-9). Level 1 consisted of a light reddish-brown silt loam with a heavy density of debitage. This level is comparable to Level 2 of Test Unit 3. Level 2 comprised a reddish-brown clay silt underlain by sterile reddish orange clay, a comparable result to Level 3 of Test Unit 3. Artifact density was light to moderate, and generally lower than the comparable level in Test Unit 3. However, 490 artifacts were recovered including numerous blades (Figure 22).

Figure 21. Test Unit 4, Level 2, looking north.

Table 8. Test Unit 4 Levels.

Level	Depth (cm below surface)				Description
	SW	NW	NE	SE	
1	5	5	6	7	light reddish brown silt loam
2	20	20	22	22	reddish brown clay silt

Table 9. Artifacts Recovered from Test Unit 4.

Category	Level 1	Level 2	Totals
Clovis PPKs	0	0	0
Clovis Knives	0	0	0
Clovis Preforms	0	0	0
Biface/preform	0	1	1
Channel Flake	1	0	1
Adze	0	0	0
Endscrapers	0	0	0
Spurred Endscrapers	0	0	0
Sidescrapers	4	0	4
Blade Knives	0	0	0
Flake Tools	11	1	12
Hammerstones	0	0	0
Gravers	0	0	0
Spokeshaves	1	0	1
Denticulates	0	0	0
Blades	48	17	65
Blade Cores	0	0	0
Block Cores	0	0	0
Core Planes	0	0	0
Core Tablets	0	0	0
Primary Flakes	1	2	3
Secondary Flakes	27	10	37
Tertiary Flakes	241	125	366
Totals	334	156	490

Figure 22. Select blades recovered from Test Unit 4

Test Unit 8/Test Unit 14

Excavations of Test Unit 8 revealed a concentration of uniface tools and two Clovis projectile points in close proximity to a fire-cracked chert feature. These particular features were first recorded as possible deflated hearths, but are more likely heat-treating facilities for nodules of local chert. This inference is based on the fact that modern flint knappers typically heat this variety of Buffalo River chert to improve its workability, as well as the presence of numerous heat-treated artifacts in the assemblage.

Test Units 8 and 14 are discussed together due to shared stratigraphic and feature profiles. Excavation of Level 1 in Test Unit 8 (1x1 meter unit) revealed a dense concentration of artifacts in the unit's northern half (Figure 23). Subsequent mapping and removal of artifacts revealed a dense charcoal concentration labeled Feature 3 in the northwest quadrant of Test Unit 8 (Figure 24).

Figure 23. Test Unit 8, Level 1, looking north.

To fully expose and excavate Feature 3, a second 1x1 meter unit (designated Test Unit 14) was established adjacent to the west wall of Test Unit 8 (Figures 25-26). Excavation revealed Feature 3 as a basin or basin-like feature with a maximum diameter of 74 cm and maximum depth of 36 cm (Figure 27). An upper level (1a and 1b) up to 20 cmbs consists of reddish brown sandy clay. Level 1b is differentiated from 1a by a high rock content noted by the extensive amount of debris in Test Unit 8 (see Figure 23). Underlying strata 1a and 1b is Level 2 (dark brown sandy clay) measuring up to 10 cm thick and 24 cm deep. Level 3 consists of gray

ashy clay 6 cm thick and 32 cmbs that is more restricted in extent than the other Feature 3 strata. Level 4 reaches 12 cm thick and 36 cmbs near the feature center.

The lower beach area of Area A appears to be deflated with exposed features, artifacts, and subsoil. But, the Test Unit 8/14 results show this area is not entirely destroyed. Intact stratigraphic deposits are present, and substantiate an assertion that the exposed features and associated artifacts reflect deposits that have been exposed through rising and lowering lake levels. Over 500 (*n*=506) artifacts recovered from Test Unit 8 include a variety of flake tools and bifacial implements (Table 10; Figure 28).

Figure 24. Test Unit 8, Feature 3 exposed, looking northwest.

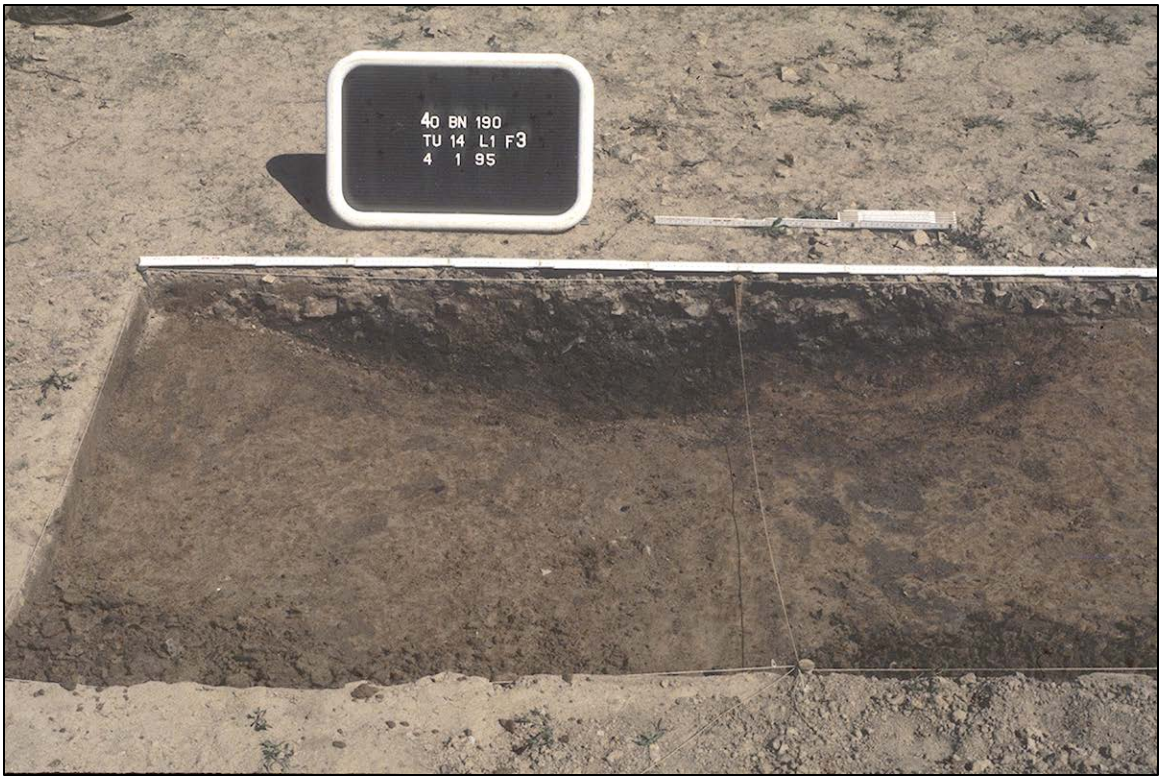


Figure 25. Feature 3 profile pre-excavation, north wall profile.

Figure 26. Feature 3 profile post-excavation, looking north.

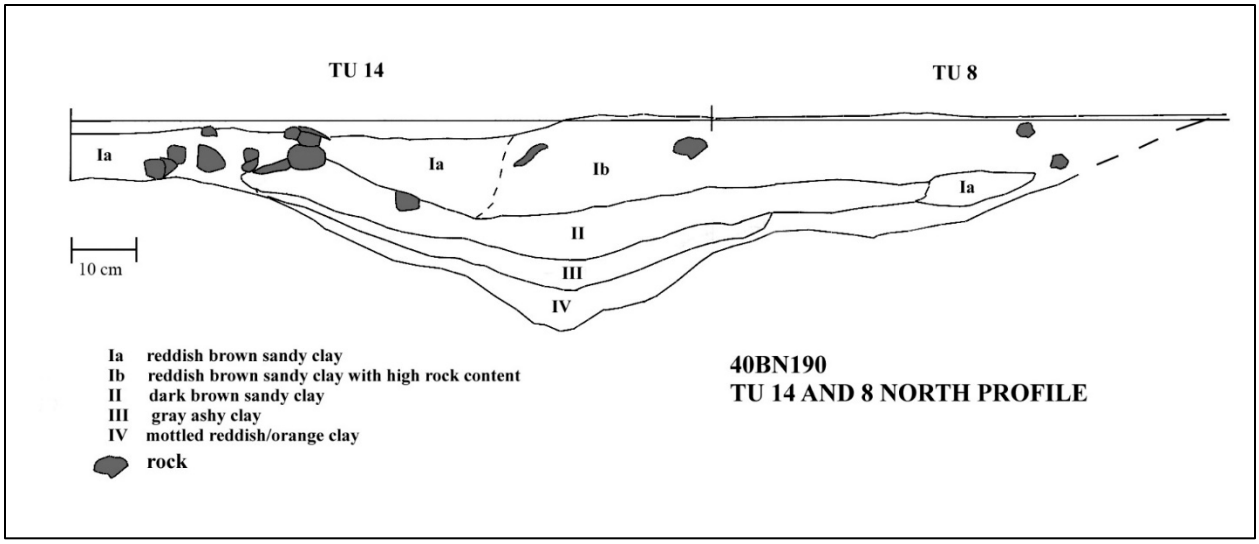


Figure 27. Feature 3, north wall profile.

Table 10. Artifacts Recovered from Test Unit 8.

Category	**Level 1**
Clovis PPKs	1
Clovis Knives	1
Clovis Preforms	0
Biface/preform	0
Channel Flake	0
Adze	0
Endscrapers	1
Spurred Endscrapers	0
Sidescrapers	3
Blade Knives	1
Flake Tools	8
Hammerstones	0
Gravers	2
Spokeshaves	0
Denticulates	1
Blades	6
Blade Cores	0
Block Cores	0
Core Planes	0
Core Tablets	0
Primary Flakes	1
Secondary Flakes	15
Tertiary Flakes	466
Total	506

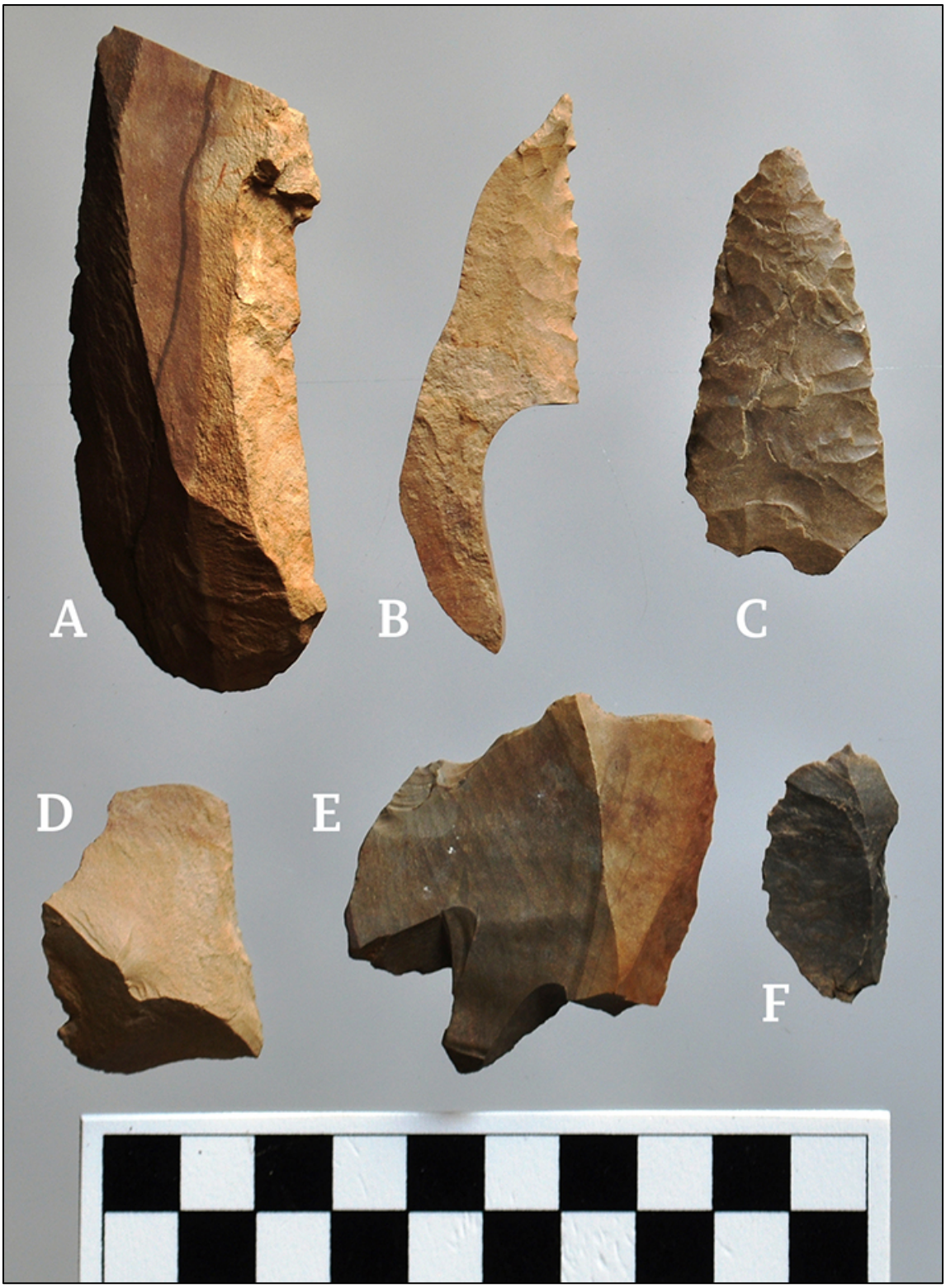


Figure 28. Artifacts recovered from test unit 8: (A) endscraper; (B) retouched flake; (C) distal reworked Clovis PPK with spokeshave; (D) retouched flake; (F) graver on blade flake.

Test Unit 9

Test Unit 9 was a 1x1 meter unit excavated to a maximum depth of 49.5 cmbs (Tables 11-12; Figures 29-30). Level 1 consisted of a medium to dark greyish-brown sandy silt-loam that transitioned to a medium brown-grayish silt-loam at the base. A moderate density of material was present including chert debitage and blade fragments. Level 2 consisted of medium brown-reddish brown sandy silt.

Table 11. Test Unit 9 Levels.

Level	Depth (cm below surface)				Description
	SW	NW	NE	SE	
1	6	6.5	6	6.5	medium to dark greyish-brown sandy silt-loam
2	14.5	14	14	15	medium brown-reddish brown sandy silt
3	23	22	23	23	light to medium brown sandy silt loam
4	33	36	34	33.5	reddish brown sandy silt loam
5	42.5	43	44	41	reddish brown sandy silt loam
6	48	49.5	48	46	reddish brown sandy silt loam

Table 12. Artifacts Recovered from Test Unit 9.

Category	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Totals
Clovis PPKs	0	0	0	0	0	0	0
Clovis Knives	0	0	0	0	0	0	0
Clovis Preforms	0	0	0	0	1	1	2
Biface/preform	0	0	0	0	0	0	0
Channel Flake	0	0	0	0	0	0	0
Adze	0	0	0	0	0	0	0
Endscrapers	0	0	0	0	0	0	0
Spurred Endscrapers	0	0	0	0	0	0	0
Sidescrapers	0	1	0	0	0	0	1
Blade Knives	1	4	1	0	0	1	7
Flake Tools	2	5	6	7	3	1	24
Hammerstones	0	0	0	0	0	0	0
Gravers	0	1	0	1	0	0	2
Spokeshaves	0	0	1	1	0	0	2
Denticulates	0	0	0	0	0	0	0
Blades	4	8	10	10	4	3	39
Blade Cores	0	0	0	0	0	0	0
Block Cores	0	0	0	0	0	0	0
Core Planes	0	0	0	0	0	0	0
Core Tablets	0	0	0	0	0	0	0
Primary Flakes	2	4	2	6	3	4	21
Secondary Flakes	8	5	14	21	11	17	76
Tertiary Flakes	216	130	254	532	374	233	1739
Totals	233	158	288	578	396	260	1913

Figure 29. Test Unit 9, Level 6, north profile.

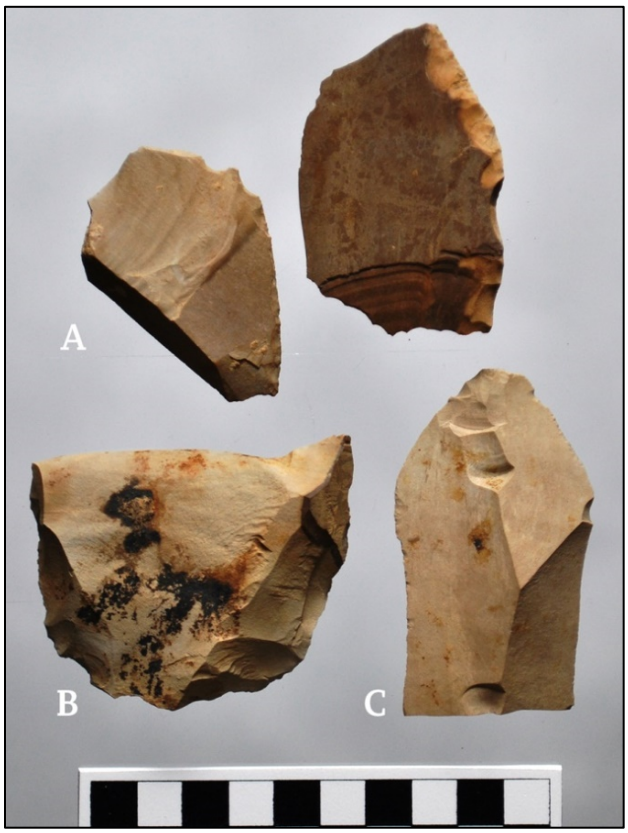


Figure 30. Select artifacts recovered from Test Unit 9: (A) flake knives; (B) Clovis preform base; (C) blade proximal.

Level 3 consisted of a light to medium brown sandy silt loam that was slightly more reddish than the previous level with a moderate artifact density including blades and unifacial tools. Charcoal "flecks" were recovered from this level for a C14 sample.

Level 4 consisted of a reddish brown sandy silt loam, and like the previous level, included a moderate amount of lithic debitage and blade fragments. Level 5 is very similar to Level 4 in composition although the artifact density does drop off. One note of significance for Level 5 is the recovery of a Clovis preform at a depth of 38 cmbs (see Table 12).

Level 6 represents the final Test Unit 9 level, and is similar in composition to Levels 4 and 5. An additional Clovis preform was recovered from 45 cmbs (see Table 12). The upper zone (levels 1 and upper 2) is considered to be derived from recent alluvial silt deposits. As the soils transition to more reddish levels, particularly below level 2, these are considered to be intact deposits relating to the Late Pleistocene occupation of the site.

Over 1900 (*n*=1913) artifacts were recovered from Test Unit 9 (see Table 12). These items included Clovis preforms, blades, and flake tools (Figure 30).

The Test Unit 11-13 Area

The eastern portion of Area A is slightly higher in elevation than the beach area. This elevated landform represents an erosional fan of colluvial deposits from the heavily dissected hillside terrain (see Figure 2). This cherty colluvial fan extends to the relic Tennessee River channel, and contains reduced cobbles and decortication flakes. This chert fan deposit may have led Paleoindians traveling along the river to the rich quarry area. A wet weather conveyance defines the eastern boundary of Area A, and the western boundary of Area D as it drains the uplands at the quarry location (see Figure 2).

This area is also heavily forested in secondary growth. Several test units (11-13, N999/E991, N998/E991) were excavated on this elevated landform in search of intact portions of the site that had not been affected by the fluctuations of Kentucky Lake. Excavations in this section reveal historic agricultural plowing. However, the build-up of colluvial soils capped and protected the underlying Late Pleistocene deposits. Each of these test units is individually described then discussed as a group.

Test Unit 11

Test Unit 11 was a 2x2 meter unit excavated to a maximum depth of 41.5 cmbs (Figure 31; Table 13). Level 1 was a 10-cm arbitrary level with dark brown, sandy humus soil A moderate to heavy artifact density (including blade fragments) was present. Level 2 was also a 10-cm arbitrary level. The soil was similar to Level 1 with a transition to reddish-brown sandy silt near the base of the level. Artifact density was moderate with projectile point and blade fragments present. An anomaly including blocky debris was observed along the western wall.

Figure 31. Test Unit 11, looking north.

Table 13. Test Unit 11 Levels.

Level	Depth (cm below surface)				Description
	SW	NW	NE	SE	
1	10	10	10	10	dark brown sandy humus
2	20	20	20	20	dark brown-reddish brown sandy silt
3	30	30	28	30	medium to dark brown sandy silt loam
4	41.5	41.5	38	39	light to medium brown sandy silt loam

Level 3 also comprised a 10-cm arbitrary level. The soil consisted of a light to medium brown sandy silt. Sand content appeared to increase near the base of the level. Artifact density was moderate to heavy including endscrapers and unifacial tools (Figure 32). The anomaly noted in Level 2 along the west wall continued to develop. Angular debris was present in the anomaly along with charcoal flecks.

Level 4 was a 10-cm arbitrary level consisting of a light to medium brown sandy-silt loam. The artifact density was lighter than preceding levels, although a fluted bifacial preform was recovered along with blade fragments (Figure 33). The anomaly observed in the overlying layers along the west wall became more apparent at the base of Level 4. This roughly circular anomaly measured 41 cm east-west and 34 cm north-south with a depth of 45 cm, and was designated Feature 8. While this feature is somewhat irregular in plan and profile views, a cultural origin has not been ruled out. Numerous flakes and blocky debris as well as charcoal flecks were recovered (Table 14).

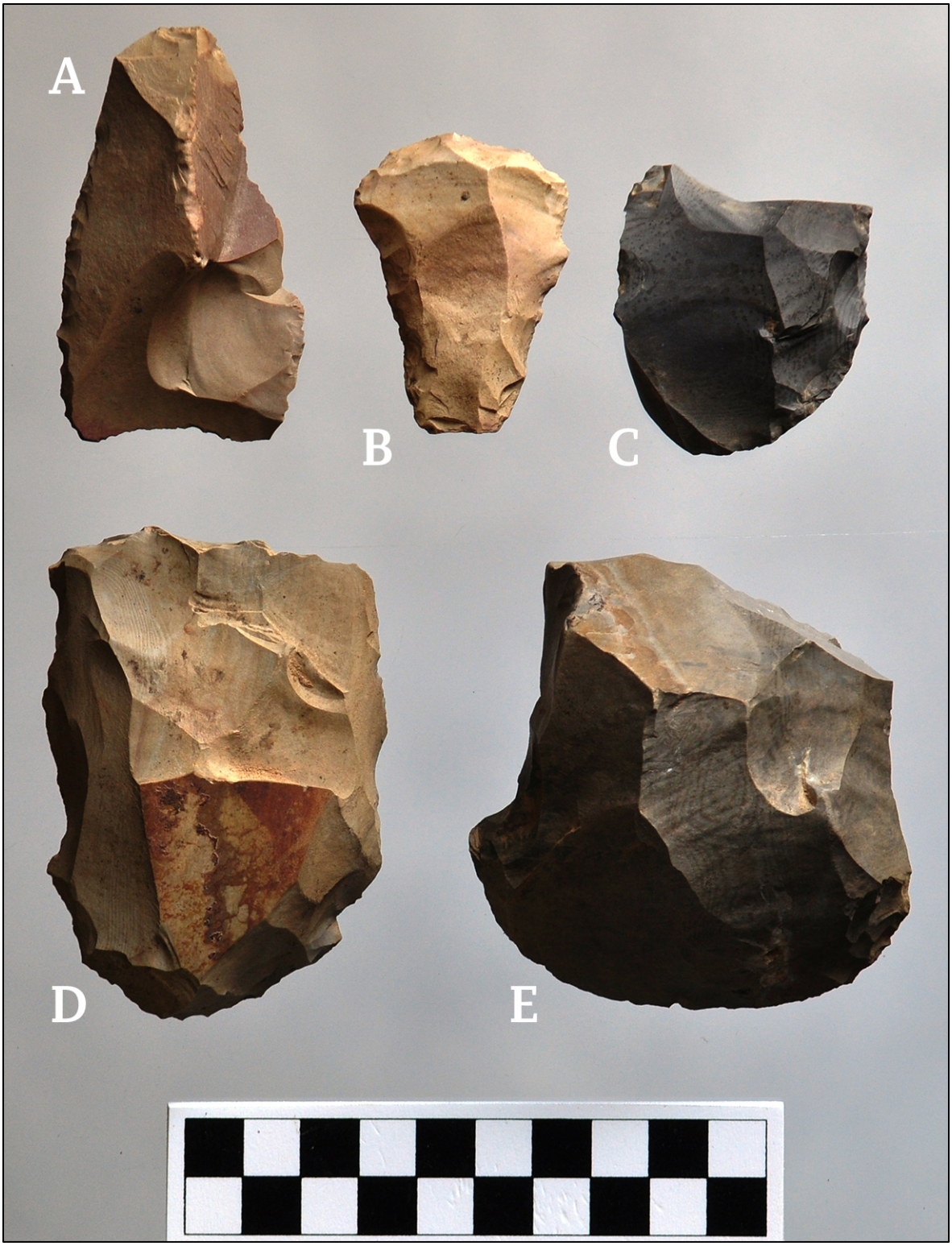


Figure 32. Select artifacts from Test Unit 11, Level 3: (A) blade knife; (B) endscraper; (C) Clovis preform; (D) biface/preform with endscraper; (E) distal adze fragment.

Figure 33. Artifacts from Test Unit 11, Level 4: (A) blade; (B) Clovis preform.

Table 14. Artifacts from Test Unit 11.

Category	Level 1	Level 2	Level 3	Level 4	Level 5	Totals
Clovis PPKs	0	0	0	0	0	0
Clovis Knives	0	0	0	0	0	0
Clovis Preforms	0	1	1	1	0	3
Biface/preform	0	0	0	0	0	0
Channel Flake	2	0	0	0	0	2
Adze	0	0	1	0	0	1
Endscrapers	0	1	2	1	0	4
Spurred Endscrapers	1	0	0	0	0	1
Sidescrapers	1	2	6	0	0	9
Blade Knives	3	1	0	0	0	4
Flake Tools	3	6	2	6	0	17
Hammerstones	1	0	0	0	0	1
Gravers	0	0	0	0	0	0
Spokeshaves	0	0	0	0	0	0
Denticulates	0	0	0	0	0	0
Blades	18	3	7	6	2	36
Blade Cores	0	0	1	0	0	1
Block Cores	0	0	6	0	0	6
Core Planes	0	0	0	0	0	0
Core Tablets	0	0	0	0	0	0
Primary Flakes	8	5	9	5	3	30
Secondary Flakes	64	60	101	51	16	292
Tertiary Flakes	612	239	664	754	426	2695
Totals	713	318	800	824	447	3102

Test Unit 12

Test unit 12 was a 2x2 meter unit to the immediate south of Test Unit 11 (Tables 15-16; Figures 34-36). Excavation proceeded in the manner like that for Test Unit 11. Level 1 consisted of an arbitrary 10-cm level. The soils were like that of Test Unit 11, Level 1. Artifact density was heavy with a Clovis preform, blades, and debitage recovered. Level 2 was excavated as an arbitrary 10-cm level. Soils consisted of a medium brown sandy-silt loam. A possible tree root disturbance was present in the center of the unit. Overall, the density of material appeared to have decreased in this level although blocky material and larger material was concentrated to the northern portion of the unit (Figure 34).

Table 15. Test Unit 12 Levels.

Level	**Depth (cm below surface)**				**Description**
	SW	NW	NE	SE	
1	10	10	10	10	dark brown sandy humus
2	20	20	20	20	dark brown-reddish brown sandy silt
3	28	25	28	28	medium to dark brown sandy silt loam

Table 16. Artifacts Recovered from Test Unit 12.

Category	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**	**Totals**
Clovis PPKs	0	0	0	0	0	0
Clovis Knives	0	0	0	0	0	0
Clovis Preforms	1	1	0	0	0	2
Biface/preform	0	0	1	0	0	1
Channel Flake	0	0	0	0	0	0
Adze	0	0	0	0	0	0
Endscrapers	0	0	0	0	0	0
Spurred Endscrapers	0	0	0	0	0	0
Sidescrapers	1	2	0	0	0	3
Blade Knives	0	0	0	0	0	0
Flake Tools	1	0	4	1	0	6
Hammerstones	0	1	0	0	0	1
Gravers	1	0	0	0	0	1
Spokeshaves	0	0	0	1	0	1
Denticulates	0	1	0	0	0	1
Blades	9	9	12	10	0	40
Blade Cores	0	0	3	0	0	3
Block Cores	0	0	0	0	0	0
Core Planes	0	0	2	0	0	2
Core Tablets	0	0	1	0	0	1
Primary Flakes	10	1	6	3	4	24
Secondary Flakes	159	56	43	35	18	311
Tertiary Flakes	1033	411	474	551	134	2603
Totals	1215	482	546	601	156	3000

Figure 34. Test Unit 12, Level 2, looking north.

Excavation through level 3 revealed soils similar to those in test unit 11. A dense concentration of blocky material and artifacts was present in the northern portion of the unit continuing from the preceding level (Figure 35). This concentration appears to be a distinct activity area within the medium to dark, sandy-silt loam soils that appear to represent intact Late Pleistocene deposits. Excavation ceased at this point as artifact density significantly dropped off at this point.

Two thousand eight hundred and seventy-nine artifacts were recovered from Test Unit 12 (see Table 16). Numerous blades and blade cores were included in the unit assemblage (Figure 36).

Test Unit 13

Test unit 13 was excavated adjacent to and east of Test Unit 11 (Figures 37-39; Tables 17-18). Excavation and soils of Test Unit 13 mirror that of Test Unit 11. An artifact concentration in the northern half of the unit (Figure 37) and soil profile (Figure 38) resembles Test Unit 8. Table 18 summarizes the artifact recovery in Test Unit 13 (see Figure 39).

Figure 35. Test Units 11 (Level 3) and 12 (Level 2), looking northwest.

Figure 36. Select artifacts from Test Unit 12: (B) Level 2, blades; (C) Level 3, blade and blade core fragment.

Figure 37. Test Unit 13, Level 3, looking north.

Figure 38. Test Unit 13, east profile.

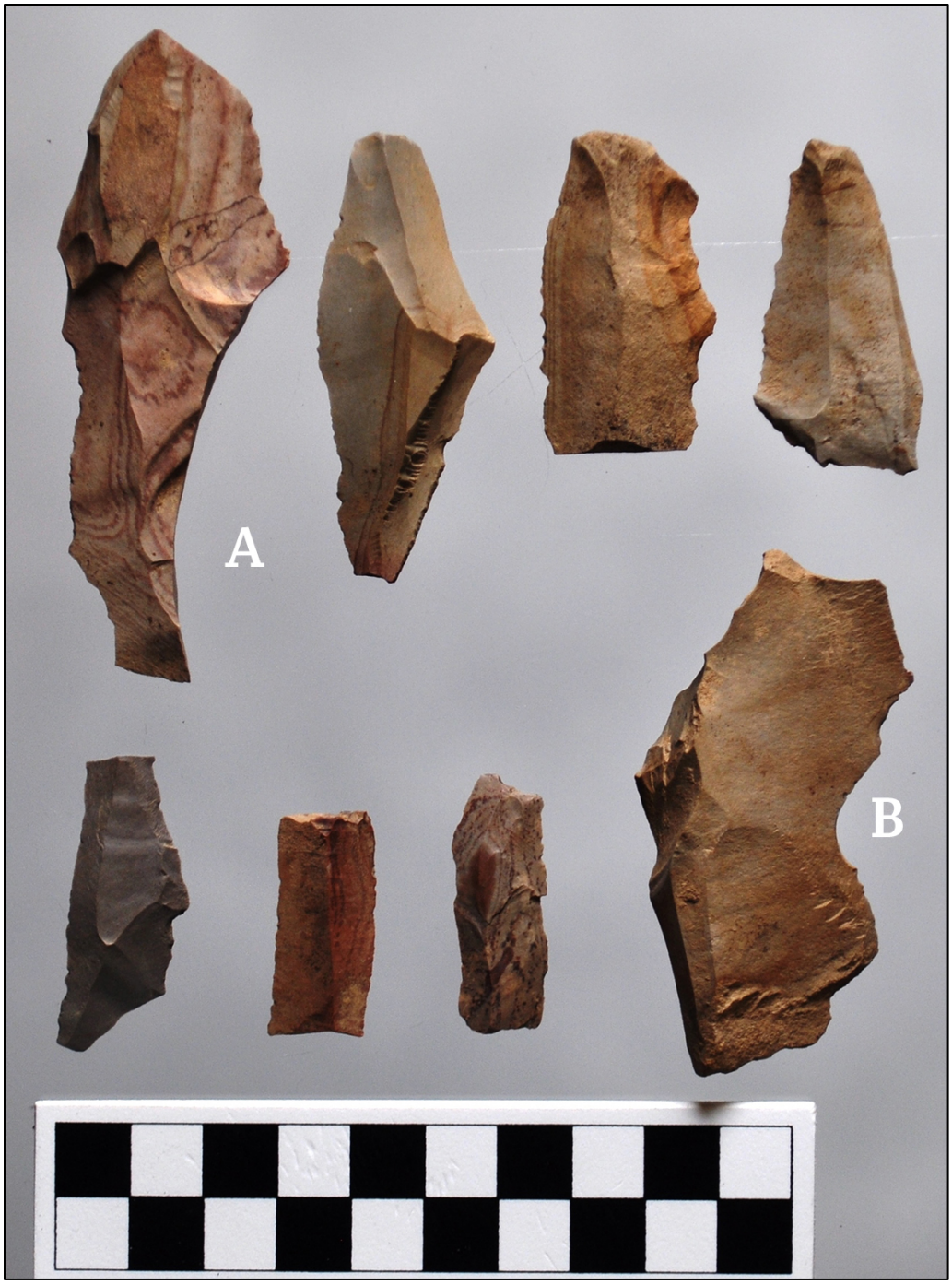


Figure 39. Select artifacts from Test Unit 13: (A) blades; (B) core tablet flake.

Table 17. Test Unit 13 Levels.

Level	Depth (cm below surface)				Description
	SW	NW	NE	SE	
1	10	10	10	10	dark brown sandy humus
2	20	20	20	20	dark brown-reddish brown sandy silt
3	30	30	28	30	medium to dark brown sandy silt loam
4	41.5	41.5	38	39	light to medium brown sandy silt loam

Table 18. Artifacts Recovered from Test Unit 13.

Category	Level 1	Level 2	Level 3	Level 4	Level 5	Totals
Clovis PPKs	0	0	0	0	0	0
Clovis Knives	0	0	0	0	0	0
Clovis Preforms	0	0	0	0	0	0
Biface/preform	1	1	2	1	0	5
Channel Flake	0	0	0	0	0	0
Adze	0	0	0	0	0	0
Endscrapers	2	0	0	0	0	2
Spurred Endscrapers	0	0	0	0	0	0
Sidescrapers	0	0	2	0	2	4
Blade Knives	0	0	1	0	0	1
Flake Tools	2	1	0	1	1	5
Hammerstones	0	0	0	2	0	2
Gravers	0	0	0	1	1	2
Spokeshaves	0	0	0	0	0	0
Denticulates	0	0	0	0	0	0
Blades	8	9	11	14	30	72
Blade Cores	0	0	0	1	1	2
Block Cores	0	2	2	2	3	9
Core Planes	0	0	1	0	0	1
Core Tablets	0	1	0	0	1	2
Primary Flakes	3	6	7	4	0	20
Secondary Flakes	81	73	35	60	34	283
Tertiary Flakes	1045	670	676	797	411	3599
Totals	1142	763	737	883	484	4009

Test Unit N999/E991

This test unit was placed to further investigate the intact deposits and possible activity area identified in Test Units 11 and 12. Unit N999/E991 consisted of a 1x1 meter unit excavated in four levels (Tables 19-20; Figures 40-41). Level 1 was an arbitrary 10-cm level with some historic material (fencing, nails) present. Soils consisted of a dark brown sandy humus. Level 2 was an arbitrary 10-cm level with reddish brown sandy-silt clay likely representing a portion of historic plowzone with both historic and prehistoric materials present. Level 3 continued as a 10-cm arbitrary level with mottled grey reddish-brown sandy-silt clay soil. Level 4 was also a 10-cm arbitrary level of light orange-tan sandy-silt clay with artifacts restricted to the Late Pleistocene (no historic disturbance). Excavation ceased at the base of Level 4 (see Figure 40).

Table 19. Test Unit N999/E991 Levels.

Level	Depth (cm below surface)				Description
	SW	NW	NE	SE	
1	10	10	10	10	dark brown sandy humus
2	20	22	21	20	reddish brown sandy silt
3	32	32	31	30	mottled grey reddish-brown sandy-silt clay
4	40	42	40	40	light orange-tan sandy-silt clay

Table 20. Artifacts Recovered from Test Unit N999/E991

Category	Level 1	Level 2	Level 3	Level 4	Totals
Clovis PPKs	0	0	0	0	0
Clovis Knives	0	0	0	0	0
Clovis Preforms	0	1	0	0	1
Biface/preform	0	0	0	1	1
Channel Flake	0	0	0	0	0
Adze	0	0	0	0	0
Endscrapers	0	0	0	1	1
Spurred Endscrapers	1	0	0	0	1
Sidescrapers	0	0	0	0	0
Blade Knives	1	0	0	0	1
Flake Tools	2	0	0	2	4
Hammerstones	0	0	0	0	0
Gravers	0	1	1	0	2
Spokeshaves	0	0	1	0	1
Denticulates	0	0	0	0	0
Blades	4	2	1	1	8
Blade Cores	0	0	0	0	0
Block Cores	0	2	0	0	2
Core Planes	0	0	0	0	0
Core Tablets	0	0	0	0	0
Primary Flakes	10	0	0	1	11
Secondary Flakes	34	5	4	5	48
Tertiary Flakes	486	103	201	260	1050
Totals	538	114	208	271	1131

Figure 40. Test Unit N999/E991, Level 4.

Figure 41. Artifacts from Test Unit N999/E991, Level 3: (A) denticulate; (B) utilized blade distal; (C) spurred endscraper; (D) biface, early stage preform.

Test Unit N998/E991

As with the previous unit, N998/E991 was a 1x1 meter unit was placed immediately south of unit N999/E991 to further investigate deposits in this vicinity of Area A (Tables 21-22; Figure 42). Levels 1-4 were arbitrary levels ranging from 10-14 cm with soils like those of the preceding test unit (see Table 21). No historic materials were present . Possible Late Paleoindian and later prehistoric materials were recovered from Level 2 although Clovis and possible Late Paleoindian materials were restricted to Level 3 (see Table 22). The occupation in Level 4 was Clovis in origin as recovered artifacts included blades and blade tools.

Table 21. Test Unit N998/E991 Levels.

Level	Depth (cm below surface)				Description
	SW	NW	NE	SE	
1	10	11	10	13	brown sandy humus
2	22	22	21	25	reddish brown sandy silt
3	33	36	32	35	mottled grey reddish-brown sandy-silt clay
4	45	46	46	44	light orange-tan sandy-silt clay

Table 22. Artifacts Recovered from Test Unit 998/991.

Category	Level 1	Level 2	Level 3	Level 4	Totals
Clovis PPKs	0	0	0	0	0
Clovis Knives	0	0	0	0	0
Clovis Preforms	0	0	0	0	0
Biface/preform	0	1	0	1	2
Channel Flake	1	0	0	0	1
Adze	0	0	0	0	0
Endscrapers	0	0	0	0	0
Spurred Endscrapers	0	0	0	0	0
Sidescrapers	0	0	0	0	0
Blade Knives	0	0	0	0	0
Flake Tools	0	0	2	0	2
Hammerstones	0	0	0	0	0
Gravers	0	0	0	0	0
Spokeshaves	0	0	0	0	0
Denticulates	0	0	0	0	0
Blades	1	1	1	1	4
Blade Cores	0	0	0	0	0
Block Cores	0	0	2	0	2
Core Planes	0	0	0	0	0
Core Tablets	0	0	0	0	0
Primary Flakes	5	0	2	0	7
Secondary Flakes	44	3	7	3	57
Tertiary Flakes	590	137	189	254	1170
Totals	641	142	203	259	1245

Figure 42. Select blade fragments recovered from Test Unit 998/991.

OCR (Oxidizable Carbon Ratio) Dates, Test Unit N998/E991

Five OCR (oxidizable carbon ratio) dates were recovered from this unit (Broster and Norton 1999). As presented in Table 23, Level 3 yielded a date of 5,856-7,234 yr BP.

Three dates were derived from Level 4, including a date of 9,566 yr BP from the upper half of Level 4 (at 32-40 cmbs). The zone between 40-45 cmbs produced a date of 11,747 yr. BP, with an additional date of 12,469 yr BP obtained from beneath Level 4.

Additional samples were submitted from a soil column taken 20 m to the north of unit N998/E991. A date of 12,796 yr BP was obtained at 50 cmbs while at 60 cmbs a date of 15,344 yr BP was obtained.

These dates confirm that a series of intact deposits from the mid-Holocene through Clovis/Late Pleistocene are present at Carson-Conn-Short. While mid to late Holocene dates were derived from these deposits, this should not be taken that an extensive Holocene occupation is present at the site. The number of Archaic and Late Paleoindian artifacts recovered from the site was minimal in comparison to artifacts that are unquestionably Clovis age.

Table 23. Oxidizable Carbon Ratio (OCR) Dates from Test Unit N998/E991.

Test Unit N998/E991	**OCR**
Level 3	5,856 – 7,234 yr BP
Level 4, upper half (32-40 cm)	9,566 yr BP
Level 4 – 40-45 cmbs	11,747 yr BP
20 meters north at 50 cmbs	12,469 yr BP
20 meters north at 60 cmbs	15,344 yr BP

Block A Auger Test Results

Vance Haynes visited Carson-Conn-Short in 1993 (Broster and Norton 1996) and employed a core auger in each of the 40BN190 complex localities. The upper portions of Area A, on top of the colluvial fan near the Test Unit 11-13 area, yielded a blade fragment at 1.2 meters. This depth roughly corresponds to the elevation of the lower beach area and may represent additional intact deposits buried beneath colluvial deposits.

The Block A (Test Unit 11-13) Area in Context

Figures 43-49 provide information on the sequence of deposits in the Test Unit 11-13 area. Four distinct levels were defined within these test unit profiles (see Figures 43-44). The uppermost level consisted of brown sandy humus of recent origin. Level 2 was mottled reddish-brown sandy-silt clay that appears to have originated during the mid-Holocene based upon the OCR dates (see Table 23). Mottled reddish gray/brown sandy-silt clay was present in Level 3 that dates to the Early Holocene to Late Pleistocene. Level 4, consisting of light orange-tan sandy-silt clay, is Late Pleistocene/Clovis period in origin. A fifth level, comprised of dark orange-brown sandy-silt clay, is potentially pre-Clovis in origin. These strata represent intact deposits and may also be evaluated through the vertical and horizontal distribution of artifacts

within each level. Figures 45-46 illustrate the distribution of artifacts in Test Units 11-13 and N999/E991. Recovered artifacts have been summarized in Tables 24-27.

Figure 46 illustrates the distribution of artifacts in Test Units 11-13, Level 3 (Tables 24-26 summarize the artifacts recovered from this level). Most evident is the lack of post-Clovis or Paleoindian artifacts. The occurrence of specific Clovis projectile points further supports the contention that Level 3 represents a sealed Clovis occupation stratum. Cross-mending of artifacts 95-1-92 and 95-1-93 further suggests that minimal disturbance or bio-turbation has occurred within this level.

Figure 43. Test Units 11 and 12, east profile.

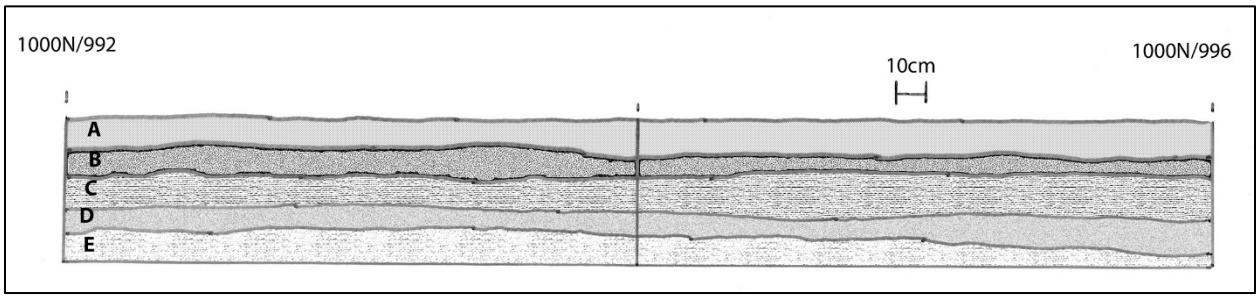


Figure 44. Area A, Test Units 11 and 13, north profile.

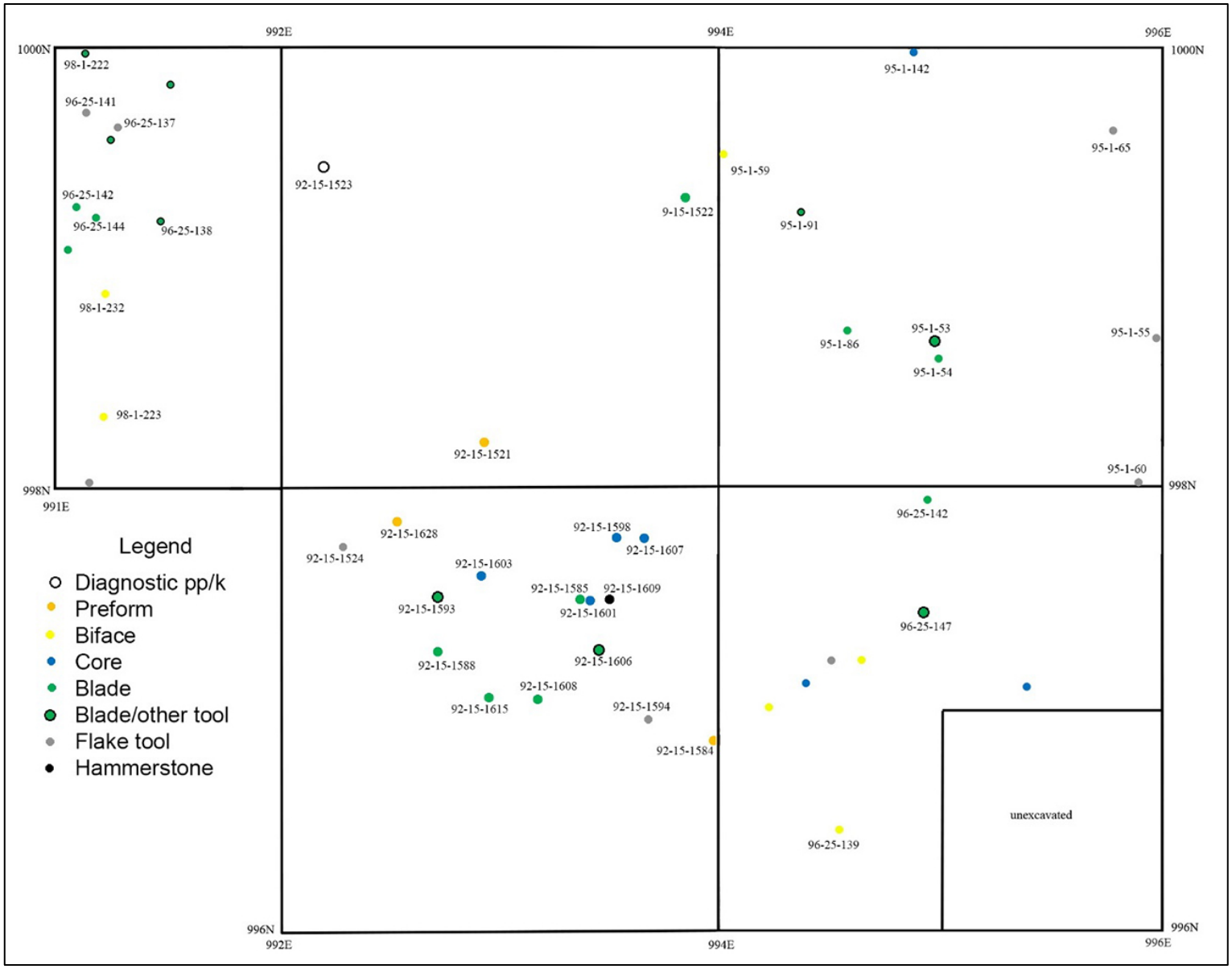


Figure 45. Distribution of artifacts in Test Units 11-13 and N999/E991, Levels 1 and 2 (see Tables 24-26) .

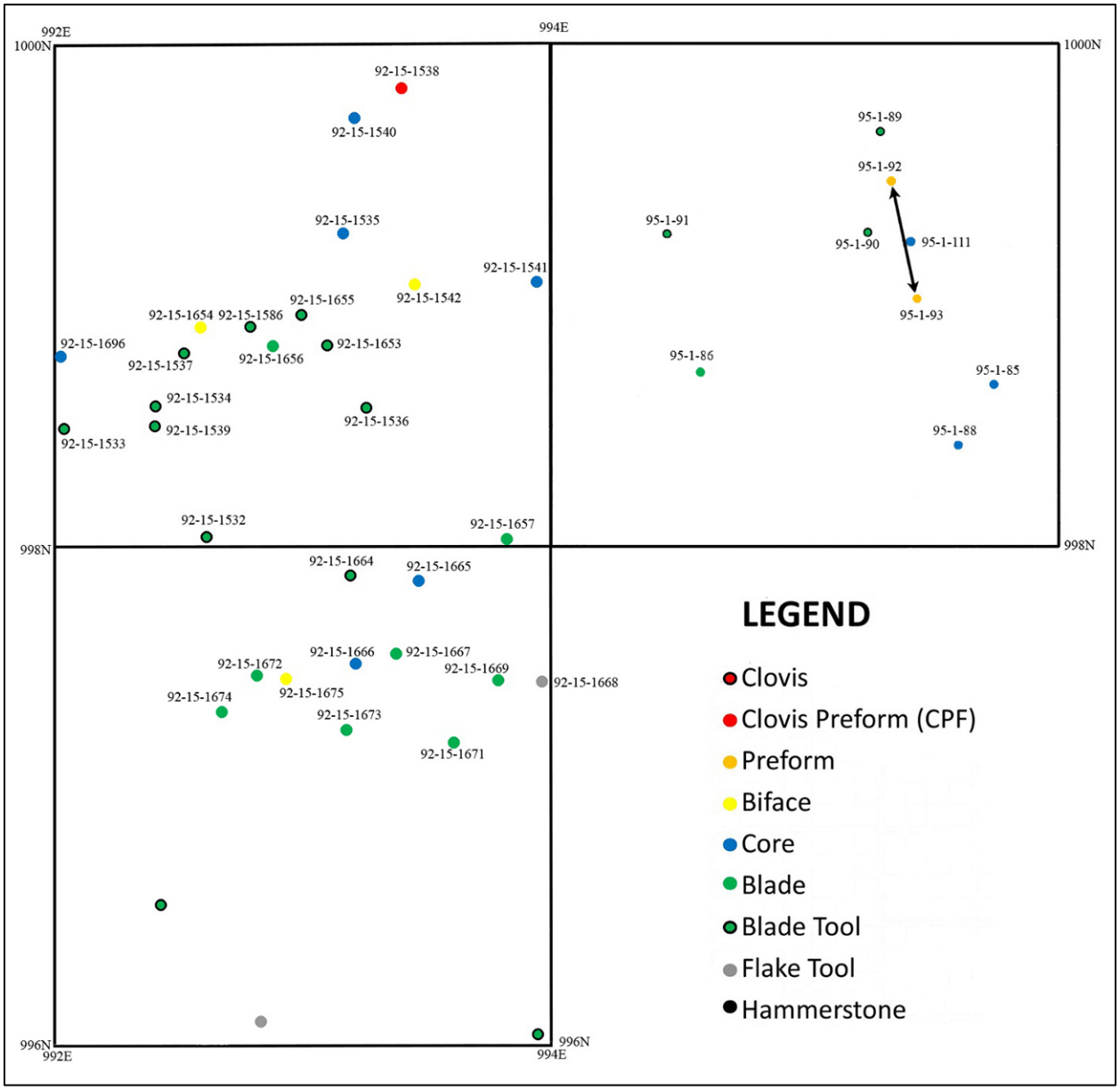


Figure 46. Distribution of artifacts in Test Units 11-13 and N999/E991, Level 3 (see Tables 24-26).

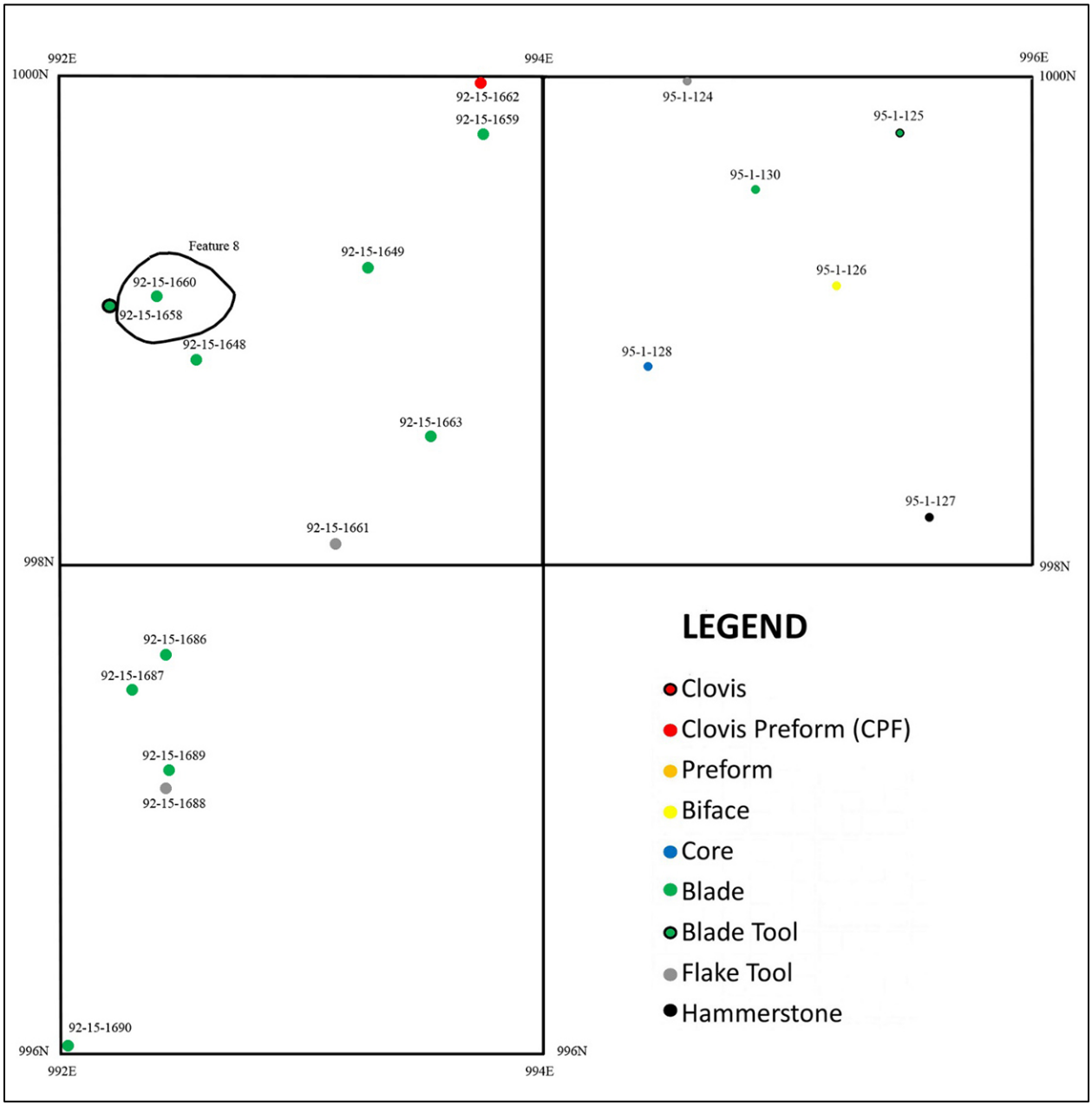


Figure 47. Distribution of artifacts in Test Units 11-13, Level 4 (see Tables 24-26.

Figure 48. Core fragments recovered from Test Unit 11, Level 3.

Table 24. Artifacts Mapped and Recovered from Test Unit 11.

Levels 1-2		Level 3	
Catalog #	Description	Catalog #	Description
92-15-1521	Biface (proximal)	92-15-1532	Sidescraper
92-15-1522	Blade (proximal)	92-15-1533	Sidescraper
92-15-1523	Diagnostic PPK	92-15-1534	uniface scraper
		92-15-1535	Core (block)
		92-15-1536	Endscraper/plane
		92-15-1537	Endscraper
		92-15-1538	Fluted Clovis, prox.
		92-15-1539	Sidescraper
		92-15-1540	Core (block)
		92-15-1541	Core (blade)/Biface
		92-15-1542	Biface (chopper)

Table 25. Artifacts Mapped and Recovered from Test Unit 12.

Levels 1-2		Level 3	
Catalog #	Description	Catalog #	Description
92-15-1584	Clovis preform	92-15-1664	Core (blade)
92-15- 1585	Blade (proximal)	92-15-1665	Core (blade)
92-15-1588	Blade	92-15-1666	Core tablet flake
92-15-1593	Sidescraper	92-15-1667	Blade
92-15-1594	Denticulate/Sidescraper	92-15-1668	Utilized flake
92-15-1598	Core (block)	92-15-1669	Utilized flake
92-15-1601	Flake	92-15-1671	Blade
92-15-1603	Angular debris	92-15-1672	Blade like flake
92-15-1606	Sidescraper	92-15-1673	Blade (midsection)
92-15-1607	Core (tested cobble)	92-15-1674	Blade (retouched)
92-15-1608	Blade	92-15-1675	Biface (fragment)
92-15-1609	Hammerstone		
92-15-1615	Blade (proximal)		
92-15-1628	Clovis preform, base		

Figure 49. Select blades and blade-like flakes recovered from Test Unit 12.

Table 26. Artifacts Mapped and Recovered from Test Unit 13.

Levels 1-2		Level 3	
Catalog #	Description	Catalog #	Description
95-1-53	Endscraper	95-1-85	Core (blade)
95-1-54	Blade	95-1-86	Blade knife
95-1-55	Flake scraper	95-1-88	Core
95-1-59	Biface (ppk distal)	95-1-89	Uniface tool
95-1-60	Flake scraper/knife	95-1-90	Uniface tool
95-1-65	Flake scraper	95-1-91	Endscraper
95-1-86	Blade knife	95-1-92	Biface (refit #93)
95-1-91	Endscraper	95-1-93	Biface (refit #92)
95-1-142	Core (block)	95-1-111	Core
96-25-139	Clovis preform		
96-25-142	Blade (proximal)		
96-25-147	Endscraper		

Table 27. Distribution of Artifacts in Area A Block (10 m^2) by stratum.

Category	**1**	**2**	**3**	**4**	**5**	**Totals**
Clovis PPKs	2	0	0	0	0	2
Clovis preforms – late stage	2	3	1	1	0	7
PPK fragment	2	0	0	0	0	2
Clovis Preforms – early stage	1	2	3	3	0	9
Channel flake	1	2	0	0	0	3
Uniface chopper	0	0	2	0	0	2
Uniface Endscraper	2	1	2	2	0	7
Spurred Endscraper	2	0	0	0	0	2
Uniface Sidescraper	3	4	8	0	2	17
Blade knife	7	6	1	1	1	16
Retouched flake	9	7	9	10	1	36
Graver	1	1	1	1	1	5
Spokeshave	0	0	1	1	0	2
Denticulate	0	1	0	0	0	1
Blade Core	0	0	4	1	1	6
Blade	47	25	32	32	35	171
Block Core	0	0	4	1	1	6
Core Plane	0	0	3	0	0	3
Hammerstone	2	0	0	0	0	2
Core Tablet	0	1	1	0	1	3
Burin	1	0	0	0	0	1
Primary flake	51	12	24	13	11	111
Secondary flake	547	199	190	168	69	1,173
Tertiary flake	6,698	1,631	2,166	2,616	1,204	14,315
Shatter	13,669	4,988	2,191	2,022	531	23,401
Totals	21,047	6,883	4,643	4,872	1,858	39,303

The recovery of a Middle Holocene Big Sandy projectile point indicates that the upper level has been subject to some minimal mixing. Occupations post-Clovis in age, most likely Middle Archaic, occurred to a smaller extent compared to the previous Clovis occupation (based upon the more substantial quantity of Clovis and Paleoindian artifacts). Establishment of the active river channel in its current course by the Middle Archaic period would have resulted in rather slight fluvial deposition in this portion of Area A. Slow alluvial accretion would have resulted in some mixing of materials between occupations.

To conclude, the test unit excavations clearly revealed the presence of intact Late Pleistocene deposits at 40BN190. Paleoindian implements recovered from sealed contexts, along with corroborating OCR dates, are a unique occurrence within the southeastern US. The Carson-Conn-Short work provided the opportunity to evaluate stratigraphically segregated components, and showed that our knowledge of southeast US Paleoindian adaptations need not be limited to information derived from surface collections or large scale surveys.

Cumberland Island

Cumberland Island is an extension of a remnant levee inundated by the waters of Kentucky Lake for most of the year (see Figure 2). This landform is only visible during the winter months when TVA lowers the entire Kentucky Lake reservoir (Figure 50). Kit Carson dubbed this remnant Cumberland Island after a fluted Cumberland projectile point was recovered there.

A surveyor's transit was utilized in the mapping and recovery of artifacts within the Cumberland Island portion of Area A for spatial analysis (Figure 51; Appendix B). We considered this an extension of Area A during our site investigations and included recovered Cumberland Island items (Figures 52-56) in the Area A artifact counts. The surface recovery of artifacts was segregated from other portions of Area A for added control.

Figure 50. Location of Cumberland Island (lower beach of Area A in foreground).

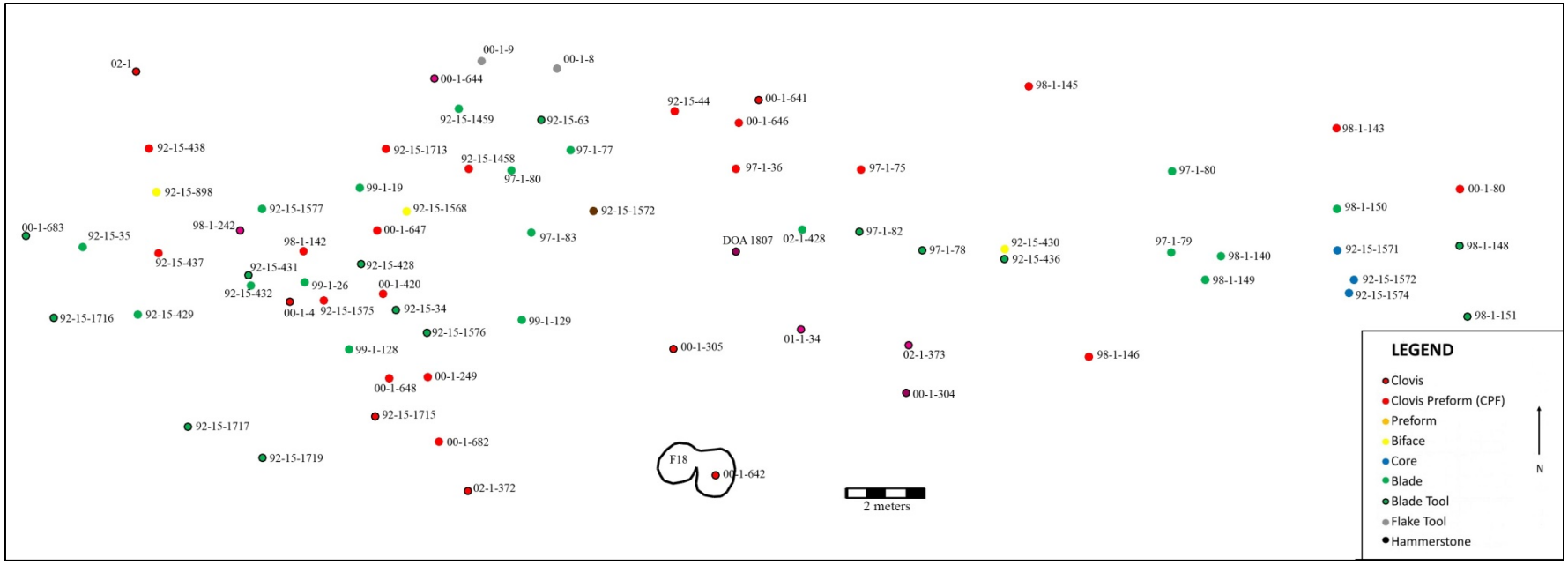


Figure 51. Point provenience map of Cumberland Island (see Appendix B).

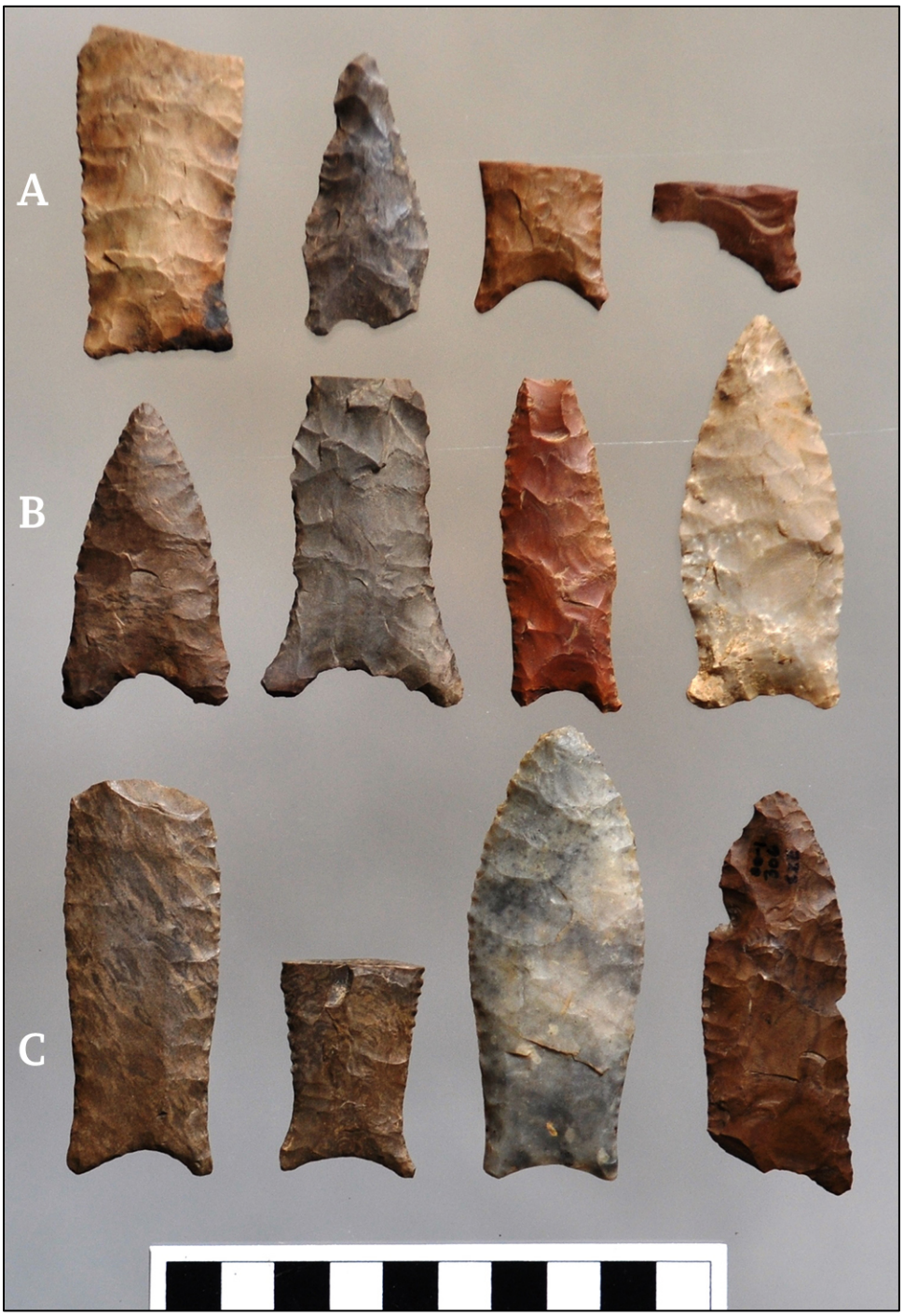


Figure 52. Select projectile points recovered from Cumberland Island locale: (A) Beaver Lake preform, Quad, Beaver Lake base, Quad base; (B) Quad, Quad preform, Beaver Lake, Beaver Lake; (C) Cumberland, unfluted Cumberland base, Clovis, Clovis.

Figure 53. Select Clovis fluted preforms recovered from Cumberland Island.

Figure 54. Select blade tools recovered from Cumberland Island.

Figure 55. Select blade cores recovered from Cumberland Island.

Figure 56. Additional artifacts recovered from Cumberland Island.

Area B

Area B is located north and east of Area A within the bounds of 40BN190 (see Figure 2). Area B is an almost completely exposed secondary levee roughly 580 meters long with a maximum width of about 32 meters (Figure 57). Investigations in Area B were restricted to uncontrolled surface collection, with no subsurface investigations.

Area B appears to be the western extension of site 40BN18 (Figure 58). C.H. Nash and J.R. Foster recorded a Native American site in this vicinity in 1941. They note finding cord marked, clay tempered pottery and mussel shells on the banks of the Tennessee River, which probably indicates they were actually reporting cultural deposits on the levee north of the location now known as 40BN18.

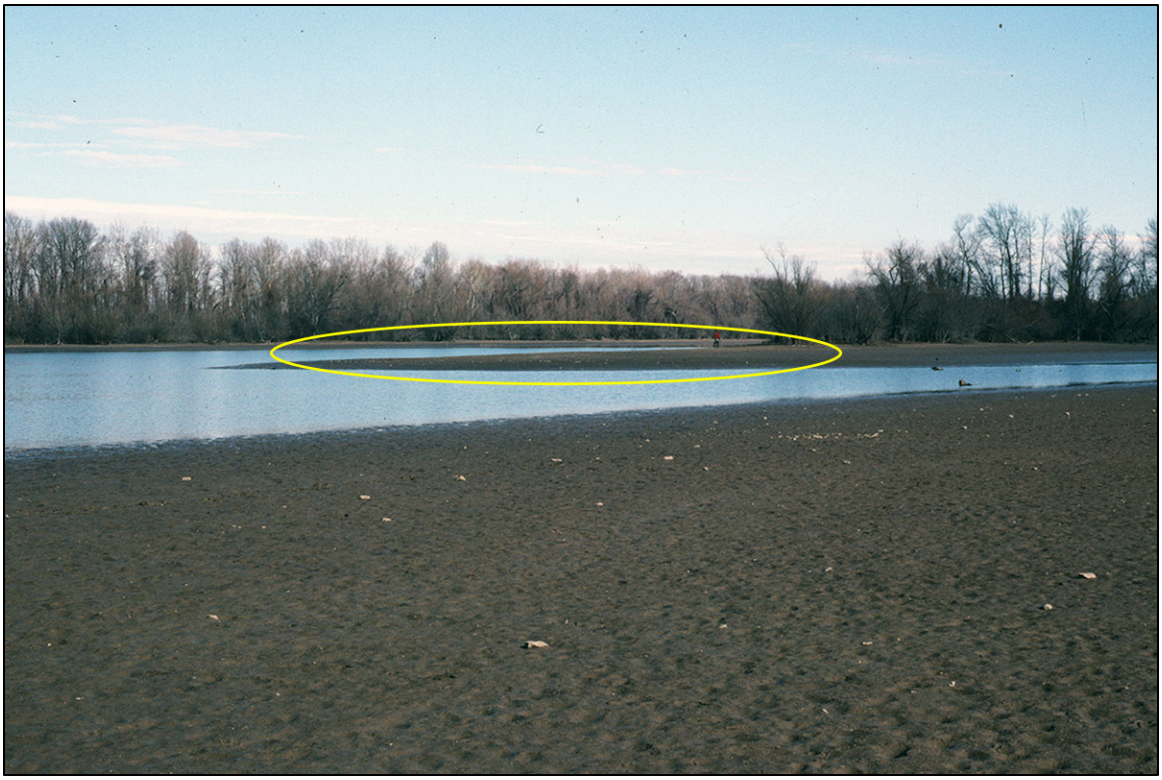


Figure 57. View of Area B (in background) from Area A, looking northeast.

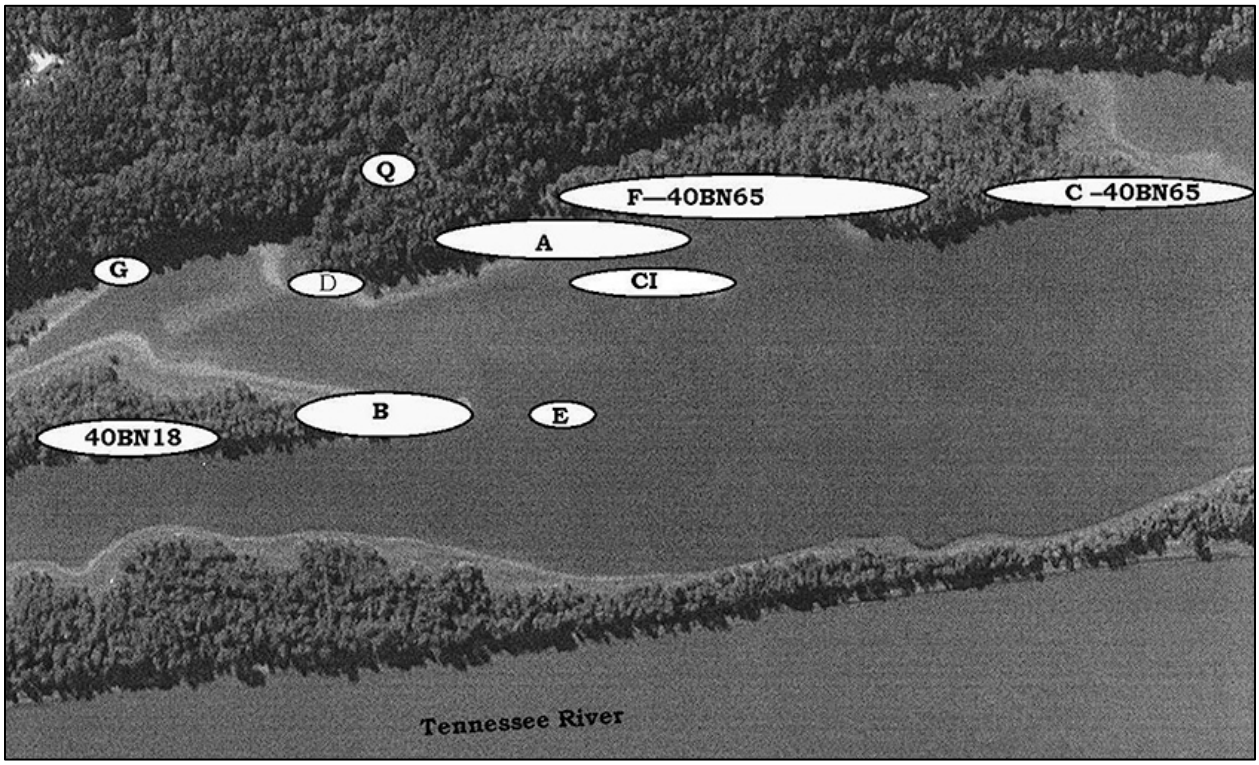


Figure 58. Aerial view of the 40BN190 complex, with 40BN65 and 40BN18 site areas.

Ernest Sims later reported finding Paleoindian projectile points and tools at 40BN18 from the second levee south of the current Tennessee River channel (Sims 1971). The paleoindian portion of 40BN18 was later investigated by McNutt and Graham (1967), and further reported by Adair (1976). Site 40BN18 was named in honor of Sims when he donated a majority of this collection to Memphis State University in 1971 (Adair 1976).

The western remnant of this second levee is what has been designated Area B, and probably represents the western boundaries of 40BN18. The artifact assemblage from Area B includes fluted preforms, projectile points, unifacial blade tools, blade cores, and biface fragments (Table 28; Figures 59-62).

Table 28. Artifacts Recovered from Area B.

Category	Total
Clovis PPKs	3
Clovis Knives	1
Early Clovis Preforms	22
Late Clovis Preforms	27
Cumberland PPKs	0
Unfluted Cumberland PPKs	1
Beaver Lake PPKs	3
Quad PPKs	2
Overshot Flakes	5
Channel Flakes	2
Endscrapers	5
Spurred Endscrapers	1
Sidescrapers	26
Blade Knives	12
Gravers	11
Spokeshaves	1
Denticulates	1
Retouched Flakes	1
Sandstone Abrader	0
Hammerstones	5
Blades	77
Blade Cores	1
Core Tablet Flakes	1
Block Cores	1
Totals	209

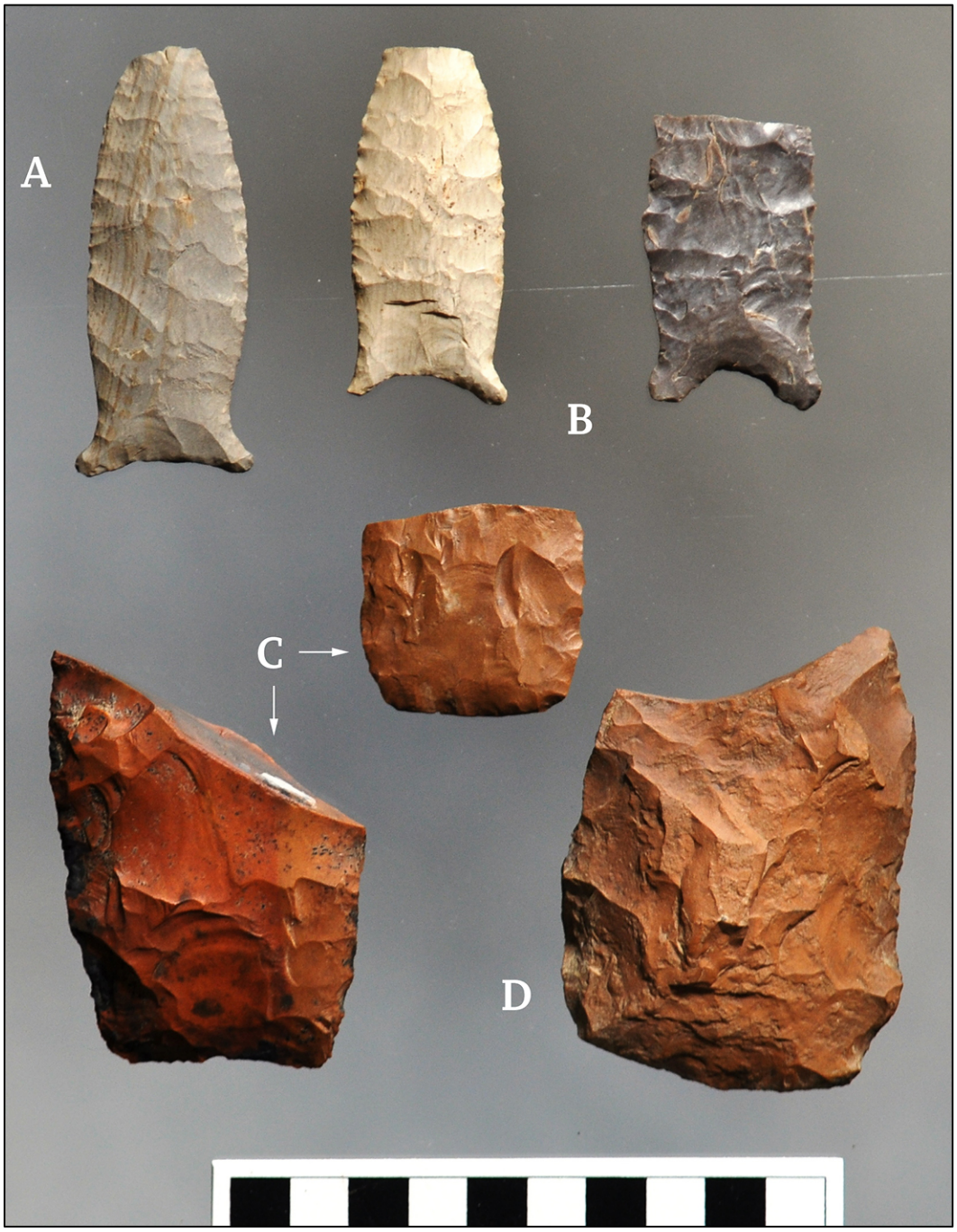


Figure 59. Paleoindian age projectile points and preforms from Area B: (A) Beaver Lake; (B) Quad; (C) late stage Clovis fluted preforms; (D) biface.

Figure 60. Unifacial blade tools recovered from Area B.

Figure 61. Select artifacts from Area B: (A) overshot flakes; (B) uniface end scraper on blade distal; (C) blades; (D) early stage fluted preform.

Figure 62. Select artifacts recovered from 40BN18. Upper row: blade tools and fragments. Lower row: Clovis preform fragments.

Area C/F (40BN65)

Area C/F measures 724 meters long and 112 meters wide. However, these designated occupation areas were later determined to comprise portions of 40BN65 that was recorded in 1941 by a University of Tennessee soil scientist who mistakenly located the site on a landform north of the site area that is now completely inundated (Ernest Simms, personal communication, 1994).

Area C consisted of an extensive exposed levee/surface area with exposed concentrated burned rock features (see Figure 58). Area F extended into the wooded area along the base of the uplands to the south of the site. Investigations in Area C/F included controlled and uncontrolled surface collections and test units. Test Units 5, 6, and 7 were excavated in Area F within the wooded, slightly higher elevation area. The uncontrolled surface collection was restricted to Area C.

Area F, Test Unit 5

Test Unit 5 was a 1x1 meter unit excavated to a depth of 24 cmbs in three levels (Tables 29-30; Figures 63-64). Level 1 consisted of a light brown sandy-silt loam excavated to a maximum depth of 10 cmbs with a moderate amount of lithic material recovered.

Level 2 was excavated in an upper and lower level. The upper level was excavated to a depth of 18 cmbs and yielded very few artifacts. The lower level was excavated to a depth of 24 cmbs and produced a much higher density of lithic material. Excavation was discontinued at the base of lower Level 2 (see Figure 63).

Table 29. Test Unit 5 Levels.

Level	Depth (cm below surface)				Description
	SW	NW	NE	SE	
1	10	9	7	10	Light brown sandy-silt loam
2 (upper)	18	18	18	21	Light brown sandy-silt loam
2 (lower)	23	24	23	24	Light brown sandy-silt loam

Table 30. Artifacts Recovered from Test Unit 5.

Category	**Level 1**	**Level 2**	**Level 3**	**Totals**
Clovis PPKs	0	0	0	0
Clovis Knives	0	0	0	0
Clovis Preforms	0	0	0	0
Biface/preform	0	0	0	0
Channel Flake	1	0	0	1
Adze	0	0	0	0
Endscrapers	0	0	0	0
Spurred Endscrapers	0	0	0	0
Sidescrapers	1	2	0	3
Blade Knives	0	3	0	3
Flake Tools	4	18	0	22
Hammerstones	1	1	0	2
Gravers	0	1	0	1
Spokeshaves	0	1	0	1
Denticulates	0	0	0	0
Blades	6	13	0	19
Blade Cores	1	0	0	1
Block Cores	0	0	0	0
Core Planes	0	0	0	0
Core Tablets	0	0	0	0
Primary Flakes	2	12	0	14
Secondary Flakes	20	30	0	50
Tertiary Flakes	63	388	3	454
Totals	99	469	3	571

Figure 63. Test Unit 5, base of Level 2.

Figure 64. Select artifacts from Test Unit 5: (A) blade; (B) blade core fragment; (C) blade midsection.

Area F, Test Unit 6

Test Unit 6 was a 1x1 meter unit excavated to a depth of 23 cmbs in two levels (Figures 65-66; Tables 31-32;). Level 1 was excavated to a maximum depth of 13 cmbs and consisted of a light brown sandy-silt loam. Level 2 is a 10-cm level excavated to a maximum of 23 cmbs with soil also described as light brown sandy-silt loam. The southern portion of the unit from seven cm north of the SW corner diagonally to 23 cm north of the SE corner consisted of a very compact, red soil consistent with burning. To further investigate this burned area, Test Unit 7 was established immediately to the south.

Blades, blade knives, and flake tools were recovered in addition to other artifacts (see Figure 66 and Table 32).

Table 31. Test Unit 6 Levels.

Level	Depth (cm below surface)				Description
	SW	NW	NE	SE	
1	10	10	13	12	Light brown sandy-silt loam
2	22	23	22	21	Light brown sandy-silt loam

Table 32. Artifacts Recovered from Test Unit 6.

Category	**Level 2**	**Level 3**	**Totals**
Clovis PPKs	0	0	0
Clovis Knives	0	0	0
Clovis Preforms	0	0	0
Biface/preform	1	1	2
Channel Flake	0	2	2
Adze	0	0	0
Endscrapers	0	0	0
Spurred Endscrapers	0	0	0
Sidescrapers	1	0	1
Blade Knives	4	8	12
Flake Tools	1	9	10
Hammerstones	2	0	2
Gravers	0	0	0
Spokeshaves	0	0	0
Denticulates	0	0	0
Blades	10	9	19
Blade Cores	0	0	0
Block Cores	0	1	1
Core Planes	0	0	0
Core Tablets	0	0	0
Primary Flakes	5	6	11
Secondary Flakes	20	24	44
Tertiary Flakes	195	333	528
Totals	239	393	632

Figure 65. Test Unit 6, base of Level 2.

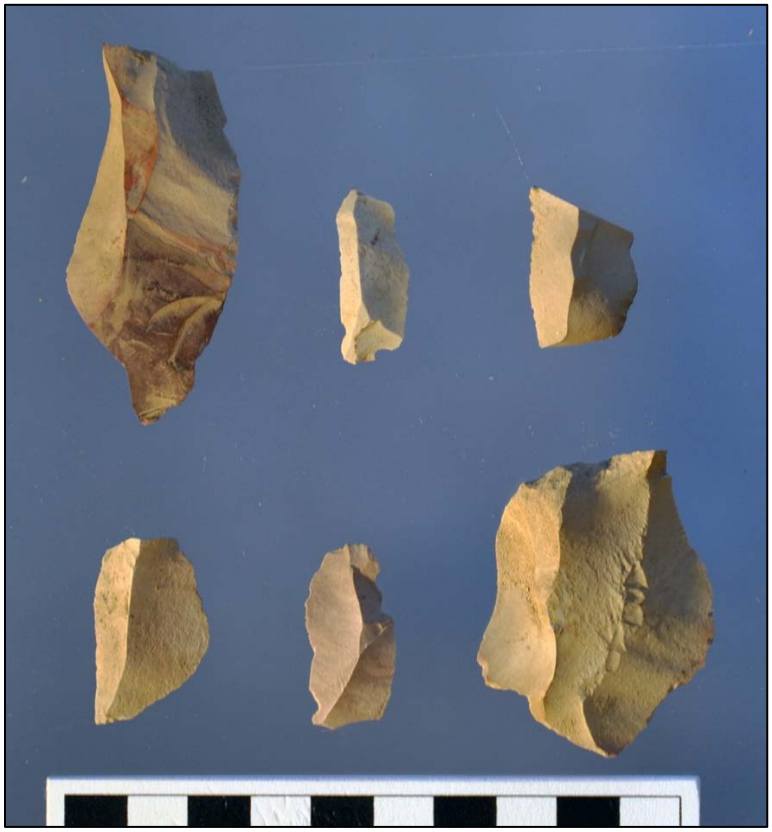


Figure 66. Select blades and blade-like flakes recovered from Area F, Test Unit 6.

Area F, Test Unit 7

Test unit 7 comprised a 1x1 meter unit excavated immediately to the south of Test Unit 6 (Tables 33-34; Figures 67-68). Level 1 reached a maximum of 10 cmbs with light brown sandy-silt loam soil. Level 2 was excavated to a depth of 20 cmbs and also consisted of light brown sandy-silt loam. A light to moderate density of lithic artifacts were recovered from these levels.

An anomaly identified at the base of Level 2 was labeled Feature 7. This feature measured 25 cm (E/W) x 27 cm (N/S) with a maximum depth of 15 cm (Figure 58). The fill consisted of a light to medium brown sandy-silt loam. Chert debitage as well as a piece of hematite was recovered. It is possible that this anomaly represents a culturally derived feature.

A limited controlled surface collection with piece-plotting was conducted to the north of Test Unit 7 within the beach margin of Area F (Figure 70). Twenty-one artifacts were mapped in this locale (Appendix D). Material recovered from controlled and uncontrolled collections are summarized in Table 35 (see Figures 71-72).

Table 33. Test Unit 7 Levels.

Level	Depth (cm below surface)				Description
	SW	NW	NE	SE	
1	10	10	8	10	Light brown sandy-silt loam
2	15	20	20	20	Light brown sandy-silt loam

Table 34. Artifacts Recovered from Test Unit 7.

Category	**Level 2**	**Level 3**	**Totals**
Clovis PPKs	0	0	0
Clovis Knives	0	0	0
Clovis Preforms	0	0	0
Biface/preform	0	0	0
Channel Flake	0	0	0
Adze	0	0	0
Endscrapers	0	0	0
Spurred Endscrapers	0	0	0
Sidescrapers	1	3	4
Blade Knives	0	4	4
Flake Tools	5	13	18
Hammerstones	0	0	0
Gravers	0	0	0
Spokeshaves	0	0	0
Denticulates	0	0	0
Blades	13	26	39
Blade Cores	0	0	0
Block Cores	0	0	0
Core Planes	0	0	0
Core Tablets	0	0	0
Primary Flakes	2	3	5
Secondary Flakes	8	13	21
Tertiary Flakes	63	184	247
Totals		92	246

Figure 67. Test Unit 7, base of Level 2.

Figure 68. Test Unit 7, Feature 7.

Figure 69. Select blade and blade-like fragments from Test Unit 7.

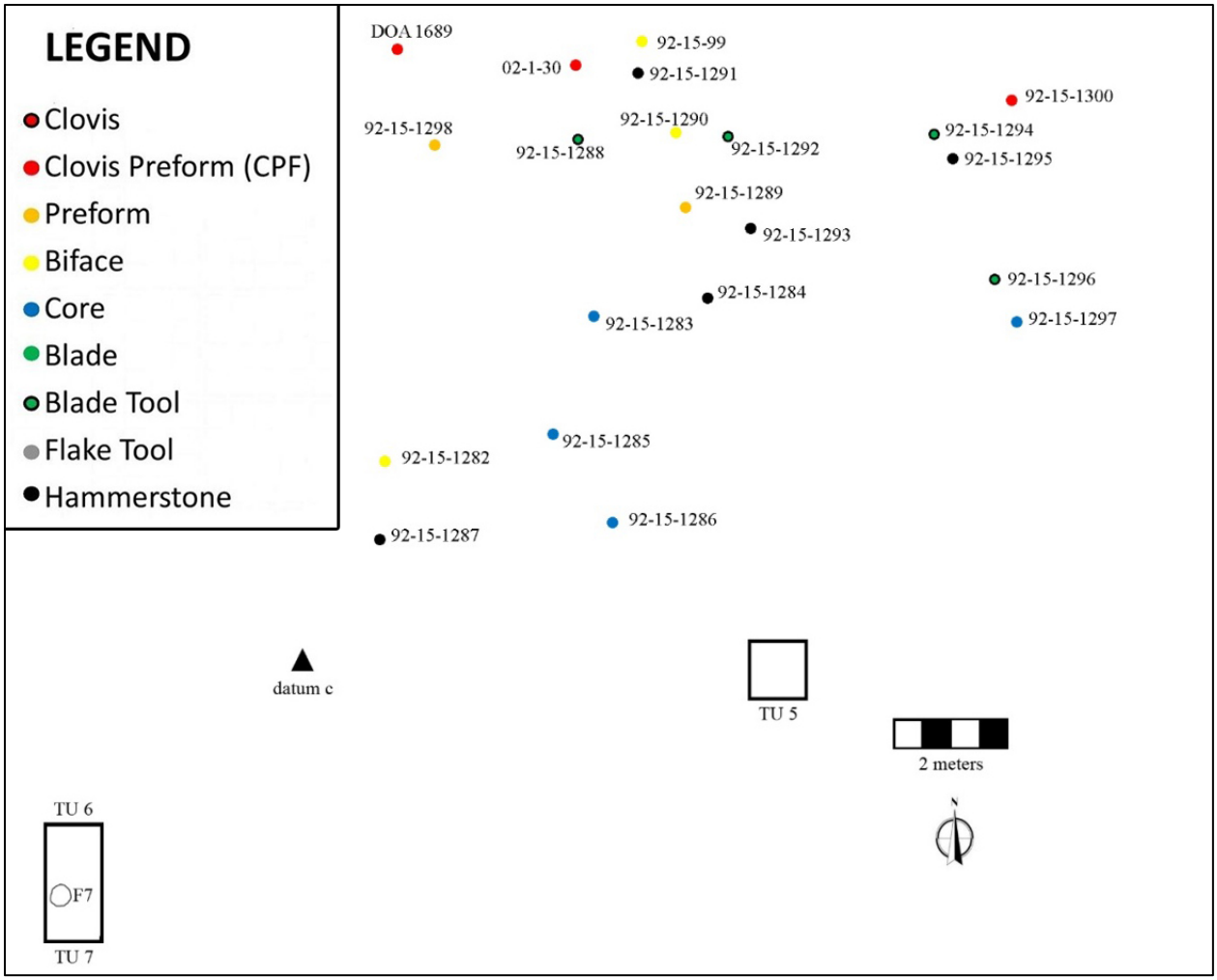


Figure 70. Piece-plot map of artifacts (with test units) within Area F.

Figure 71. Select Clovis preforms from Area F.

Figure 72. Select blade tools recovered from Area F.

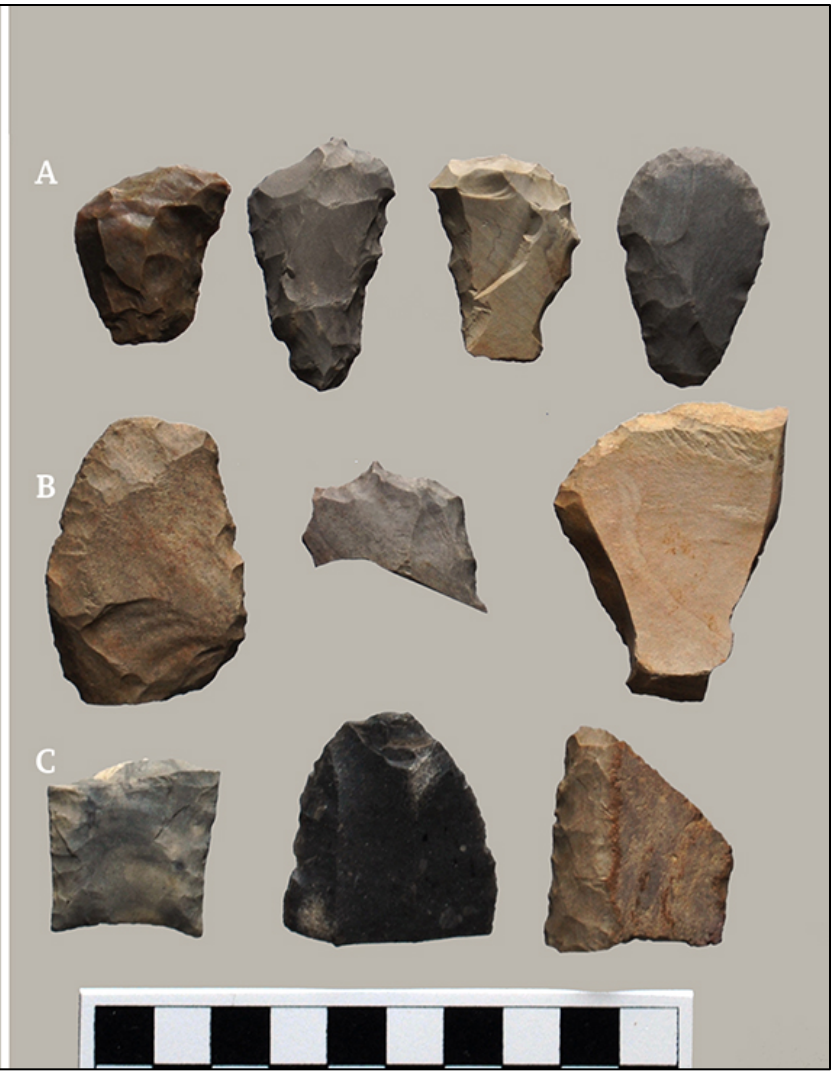


Figure 73. Additional Paleoindian artifacts recovered from Area F: (A) endscrapers; (B) flake knife, graver on blade fragment, endscraper; (C) Clovis base, blade knife proximal, sidescraper on blade fragment.

Table 35. Artifacts Recovered from Area F.

Category	Total
Clovis PPKs	2
Clovis Knives	1
Clovis Preforms	114
Biface/preform	56
Channel Flake	0
Adze	0
Endscrapers	0
Spurred Endscrapers	0
Sidescrapers	12
Blade Knives	2
Flake Tools	18
Hammerstones	5
Gravers	48
Spokeshaves	45
Denticulates	10
Blades	2
Blade Cores	5
Block Cores	27
Core Planes	0
Core Tablets	1
Primary Flakes	63
Secondary Flakes	23
Tertiary Flakes	2
Totals	442

Area C

Investigations of Area C, the western most occupation of the 40BN190 complex, were limited to surface collections (see Figures 2 and 58). A number of circular rock cluster features occur throughout Area C (Figures 74-75). This area yielded numerous tools and other artifacts (Figures 76-78; Table 36).

Figure 74. Rock cluster features in Area C.

Figure 75. Area C view to the southeast

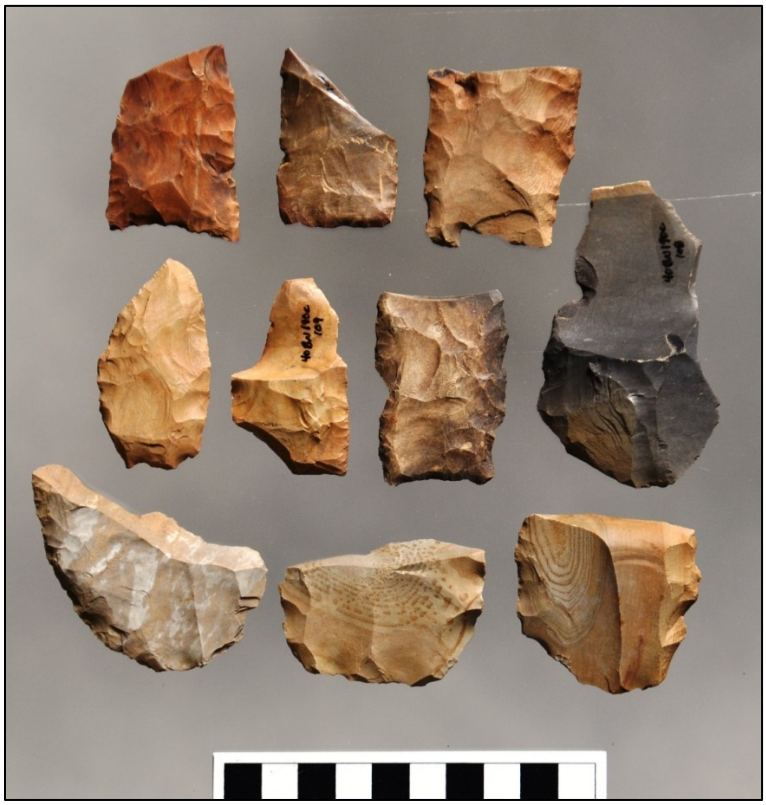


Figure 76. Select Clovis projectile points and preforms from Area C.

Figure 77. Blade tools from Area C.

Figure 78. Additional artifacts from Area C: (A) overshot flakes; (B) Clovis preform fragment; (C) core tablet.

Table 36. Artifacts Recovered from Area C (40BN65).

Category	Total
Clovis PPKs	0
Clovis Knives	5
Clovis Preforms	63
Biface/preform	36
Channel Flake	1
Adze	6
Endscrapers	11
Spurred Endscrapers	24
Sidescrapers	6
Blade Knives	1
Flake Tools	8
Hammerstones	0
Gravers	34
Spokeshaves	29
Denticulates	1
Blades	1
Blade Cores	2
Block Cores	8
Core Planes	1
Core Tablets	3
Primary Flakes	14
Secondary Flakes	9
Tertiary Flakes	1
Totals	0

Area D

Area D occurs east of Area A on the northeastern portion of the colluvial fan deposit (see Figures 2 and 58). This area measures 128.75 meters long (E-W) and 80.45 meters wide (N-S), and is nearly completely exposed (Figure 79).

Concentrations of fire-crack rock features were visible on the exposed beach areas, similar to Areas A and C. The Area investigations included controlled surface collections and piece-plotting along with the excavation of Test Unit 10. This 1x1 meter unit was excavated in a single 5 cm level as subsoil was encountered at this depth. Soils were characterized as dark brown humus with mixed modern vegetation and clay.

Test Unit 10 yielded a heavy concentration of artifacts. Over 70 artifacts were mapped in relation to two Features (10 and 14) and Test Unit 10 (Figures 80-86; Table 37; Appendix C).

Figure 79. View of Area D, looking east with Features 10 and 14 in foreground. John Broster is pointing to a Clovis base.

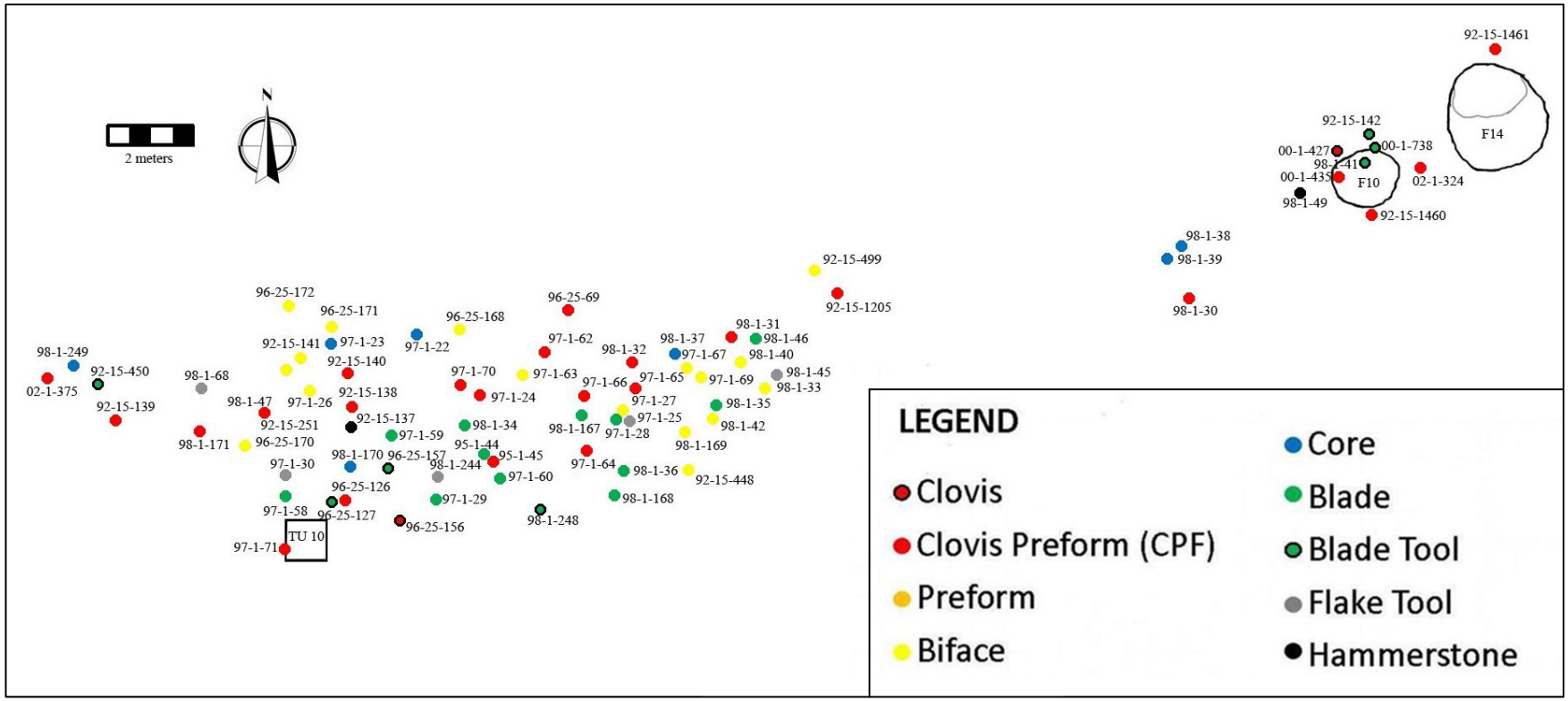


Figure 80. Piece plotted artifacts in Area D.

Figure 81. Exhausted Clovis point and fluted preforms recovered from Area D.

Figure 82. Blade tools recovered from Area D.

Figure 83. Blade cores recovered from Area D.

Figure 84. Selected overshot flakes from Area D.

Figure 85. Biface tools recovered from Area D.

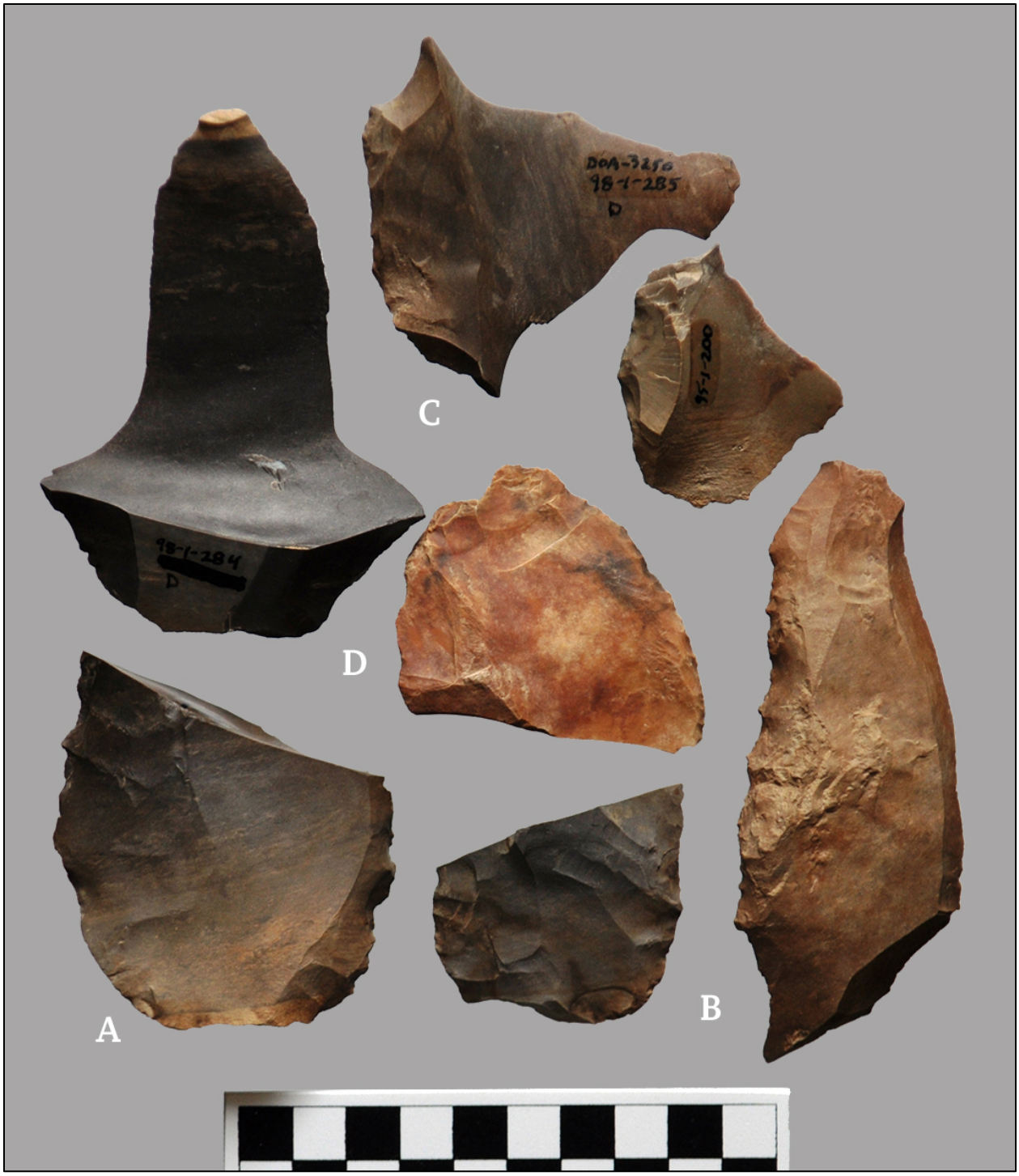


Figure 86. Select artifacts associated with Feature 10: (A) Clovis preforms; (B) sidescraper; (C) overshot flakes; (D) blade knife fragment.

Table 37. Artifacts Recovered from Area D.

Category	Total
Clovis PPKs	6
Clovis Knives	1
Early Clovis preforms	79
Late Clovis preforms	86
Cumberland PPKs	0
Unfluted Cumberland	0
Beaver Lake PPKs	0
Quad PPKs	0
Overshot flakes	43
Channel flakes	5
Endscrapers	8
Spurred Endscrapers	1
Sidescrapers	36
Blade knives	14
Gravers	5
Spokeshaves	1
Denticulates	2
Retouched flakes	4
Sandstone abrader	0
Hammerstones	2
Blades	112
Blade cores	51
Core Tablet flakes	10
Block cores	5
Totals	471

Area E

Area E, located northeast of Area A and southwest of Area B measures 145 meters long east-west and 32 meters wide north-south (Figure 87). This area could be an extension of the Area B levee, and is extensively deflated like Area D (see Figures 2 and 58). The Area E investigations were limited to uncontrolled surface collection. Among the few artifacts recovered were a large blade/flake tool and preform midsection (Figure 88).

Area G

Area G occurs at the eastern most proximity of 40BN190 (see Figures 2 and 58). This area, nearly 129 meters long (southwest to northeast) and about 81 meters wide (northwest-southeast) represents a chert deposit eroding out of the hillside (Figure 89). Investigations of this area were restricted to uncontrolled surface collections, with numerous decortication flakes, blades, and blade cores recovered (Figure 90).

This locale was later recorded as 40BN314 during a TVA shoreline survey (Angst 2011). The reporters were unaware this component of the 40BN190 complex had been designated.

Figure 87. View of Area E to the east with Area B in the background.

Figure 88. Artifacts recovered from Area E.

Figure 89. Area G, surface density of materials.

Figure 90. Select artifacts recovered from Area G: (A) blades; (B) blade core fragment.

Area Q

The erosion of Mississippian period limestone deposits created a cherty colluvial fan designated as Area Q (see Figures 2 and 58) that extends to the relic Tennessee River channel (Figure 91). Area Q contains high-quality Buffalo River chert that is a regional variant of Fort Payne chert.

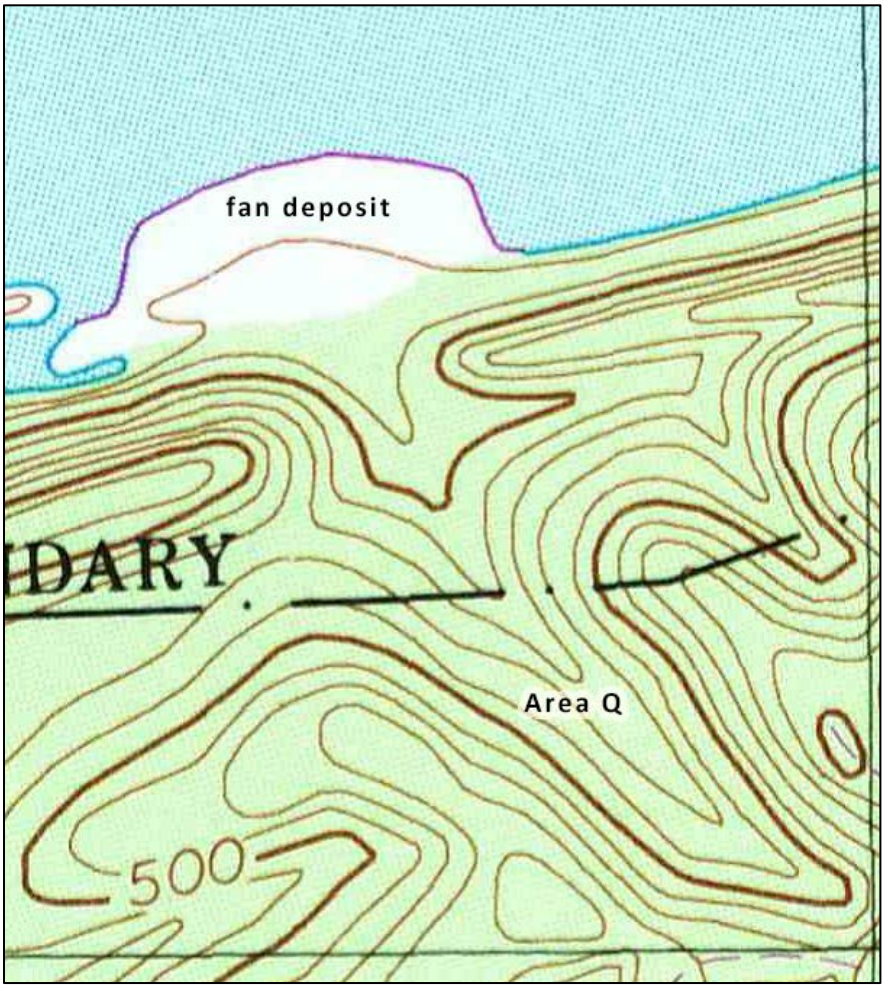


Figure 91. Topographic map of Area Q and erosional fan deposit.

The exposed beach portion of this cherty fan may have been the first location Paleoindians obtained toolstone at 40BN190. Chert cobbles, tested cobbles, expended cores, blade flakes, and reduction flakes are found across the exposed beach (Figure 92). Portions of Areas A and D are also located on top of this deposit. While moving up the drainage into the heavily dissected terrain, one can find chert cobbles eroding out of the hillside from a zone near the top. Large decortication flakes, blades, tested cores, and other chert debris can be found throughout this ancient erosional feature.

Artifacts here are nearly identical to the quarry artifact assemblage at the Sinclair site (40WY111) located in Wayne County, Tennessee (Broster et al. 2013). Paleoindians acquired Buffalo River chert at the Sinclair locale located approximately 20 miles south and east of

40BN190. Sinclair is located on top of the Western Highland Rim along the same parent Fort Payne limestone deposits as eroding out of the hillside at 40BN190. The authors believe Paleoindians produced blades and large biface preforms at Sinclair, and then transported the refined raw material to their basecamp likely located along the Buffalo River. Carson-Conn-Short occurs at a much more desirable location with the chert quarry located conveniently close to the river. Each of the 40BN190 site occupation areas are within 250 meters of the chert deposits.

Table 38 presents the total number and distribution of surface-collected artifacts from the 40BN190 site occupation areas, and includes items from private collections. Areas E and G are not included in this table since they have yet to be formally collected (as of August 15, 2014).

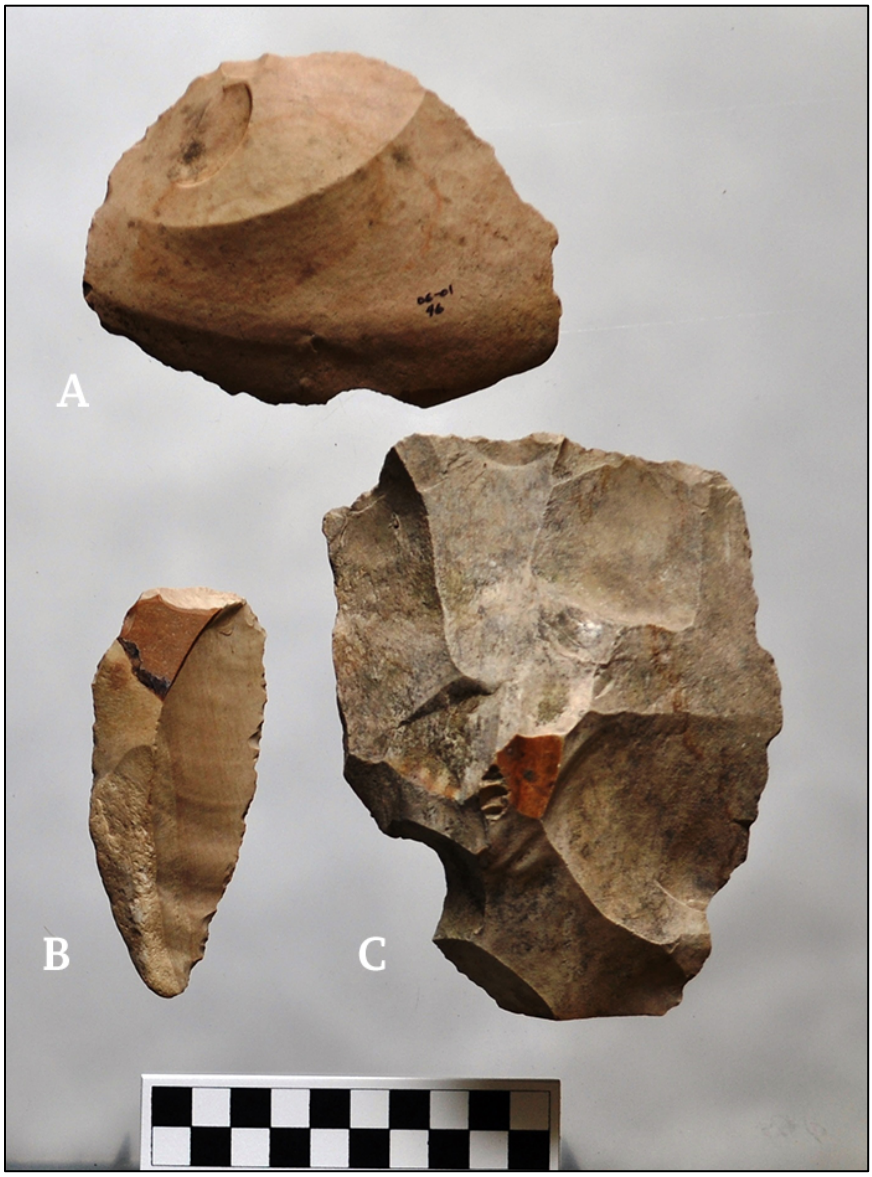


Figure 92. Artifacts recovered from Area Q: (A) spall; (B) blade; (C) blade core.

Table 38. Total Distribution of Surface Collected Artifacts.

Category	A	B	C	D	F	Totals
Clovis PPKs	18	3	0	6	2	29
Clovis Knives	14	1	5	1	1	22
Early Clovis Preforms	256	22	63	79	114	534
Late Clovis Preforms	359	27	36	86	56	564
Cumberland PPKs	6	0	1	0	0	7
Unfluted Cumberland PPKs	3	1	6	0	0	10
Beaver Lake PPKs	8	3	11	0	0	22
Quad PPKs	7	2	24	0	0	33
Overshot Flakes	103	5	6	43	12	169
Channel Flakes	16	2	1	5	2	26
Endscrapers	149	5	8	8	18	188
Spurred Endscrapers	36	1	0	1	5	43
Sidescrapers	349	26	34	36	48	493
Blade Knives	252	12	29	14	45	352
Gravers	61	11	1	5	10	88
Spokeshaves	15	1	1	1	2	20
Denticulates	14	1	2	2	5	24
Retouched Flakes	82	1	8	4	27	122
Sandstone Abrader	4	0	1	0	0	5
Hammerstones	28	5	3	2	1	39
Blades	627	77	14	112	63	893
Blade Cores	157	1	9	51	23	241
Core Tablet Flakes	19	1	1	10	2	33
Block Cores	40	1	0	5	6	52
Totals	2623	209	264	471	442	4011

Note: Areas E and G have not been collected as of 8/15/2014. (Counts include artifacts in private collections).

IV. LITHICS

Assemblage Categories

This lithic assemblage was sorted into classic categories of Paleoindian blade tool technology typically associated with Clovis and the first Americans. The following categories are based upon distinct traits and attributes: Clovis projectile points, Clovis knives, early stage Clovis preforms, late stage Clovis preforms, Cumberland projectile points, unfluted Cumberland projectile points, Beaver Lake projectile points, Quad projectile points, *outré passé* (overshot) flakes, channel flakes, endscrapers, spurred endscrapers, sidescrapers, blade knives, gravers, spokeshaves, denticulates, retouched flakes, sandstone abrader, hammerstones, blades, blade cores, core tablet flakes, and block cores. The following describes and illustrates each of the formal tool categories.

Clovis projectile points:
There are multiple variations of Clovis projectile points throughout the Southeast and beyond, some with style names. The Clovis points described in this report are lumped together unless otherwise described. This point is described as a lancelet blade with a distinct flute removed from the base of the point, usually on both sides, but also found with only one side thinned (Cambron and Hulse 1964, Justice 1987). This example is made from Buffalo River Chert.

Clovis Knives:
Clovis knives described within this report are fluted bifaces that do not display heavy basal and lateral edge grinding like completed projectile points. This example is from test unit 8, feature 3 and made from Buffalo River chert.

Early Stage Clovis preforms:
Early stage Clovis preforms are medium to large bifaces that have been thinned along the long -axis of the biface by end strike. This example is from Area D and made from Buffalo River chert.

Late Stage Clovis preforms:
Late stage Clovis preforms are relatively thin bifaces that exhibit a least one flute scar, sometimes on both sides. The end strike or fluting process is the typical reason for biface failure. This example is from Area D and made from Buffalo River chert.

Cumberland projectile points:
Cumberland projectile points have been described by Cambron and Hulse (1964:36) as triangular in form, displaying median ridges on each face of the perform. This Cumberland Island example is made from Dover chert.

Unfluted Cumberland projectile points:
These points display the diamond shape cross-section, without flute removal. This type is often considered a variation of the Beaver Lake style. This example is from Cumberland Island and made from Buffalo River chert.

Beaver Lake projectile points:
Beaver lake points have auriculate ears and are shaped much like the Cumberland point; however, they are thinned bilaterally, sometimes with basal flakes or true flutes, and have a biconvex cross-section (Cambron and Hulse 1964). This example is from Cumberland Island and made from Buffalo River chert.

Quad projectile points:
Quad projectile points were named from the type site along the Tennessee River in northern Alabama. The auriculate ears are very pronounced on this type (Cambron and Hulse 1964: 107). This example is made from Buffalo River chert Buffalo River chert.

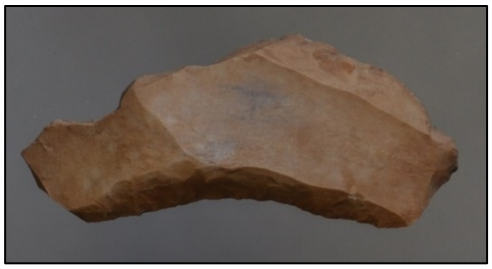
Outré passé flakes:
Outré passé flakes, also described as overshot flakes, represent a bifacial thinning flake that travels across and removes the opposite edge. This is a fast way to thin a biface. Overshot flakes are associated with Clovis (Bradley 1982). This example is made from Buffalo River chert Buffalo River chert.

Channel flakes:
Channel flakes are the actual flake that creates the flute on a Clovis, Cumberland, or other fluted projectile points. This example from Area D Is made from Buffalo River chert.

Endscraper:
Unifacially worked, usually on the distal of blades or decortication flakes. This example is made from heat treated Buffalo River chert.

Spurred Endscrapers:
Spurred endscrapers are associated with Clovis sites in the Southeast. The endscraper is crafted on the distal end of blades and flakes. The barbs sometimes show burin flake removals. This example is made from Buffalo River chert.

Sidescrapers:
This category is typically made on blades that exhibit unifacial flake removals along the lateral blade edge at a steep angle. This example is made from Buffalo River Chert.



Blade Knives:
This category consists of blades that are unifacially worked along one or both lateral edges. Blades of all sizes were utilized to create a blade knife. This example from Area A is made from Buffalo River chert.

Gravers:
This tool is made on blades and flakes with variation on the location chosen to craft a burin. This example is on the distal of a short blade from Area F (40BN65) and made from Buffalo River chert.

Spokeshaves:
Made on blades and flakes, usually thinner blades that have a low angle edge.

Denticulates:
These artifacts have one or more edges worked into multiple teeth or points, sometimes exhibiting burin flake removal to fashion the points. This example from test unit 999/991 is made from a dark variety of Buffalo River chert.

Retouched flakes:
Decortication flakes were often chosen for expediency tools by unifacially flaking along one or more edges. This example is made from Buffalo River chert.

Sandstone abrader:
Flint knapping requires having an abrader to prepare the edge before detaching a blade or biface reduction flake. The dulled edge allows the tool to grab the edge and drive the blade or flake.

Hammerstone:
Multiple varieties of materials were chosen for hammerstones at 40BN190. Quartzite, porphory, chert, and mudstone have been recovered. This quartzite example is from Area A.

Blades:
Primarily prismatic blades are found here, with some that fit into lamellar style. This example is made from Buffalo River chert.

Blade core:
Many varieties of blade cores have been recovered from 40BN190. This example is from Area A and made from Buffalo River chert.

Core tablet flake:
This is a blade core rejuvenation flake. The end of the core is removed to provide a new platform for additional blade removals. This example from Area D is made from Buffalo River chert.

Block cores:
Block or wedge cores were crafted out of cobbles here in large to small sizes. This Example from Area D is made from Buffalo River chert.

Lithic Analysis

A total of 506 chipped stone lithic artifacts have been analyzed to date. The majority of these are from piece-plotted contexts with a few distinctive or diagnostic artifacts from non-piece plot context. Artifacts are classified according to their production technology and functional categories (Figure 93). Analysis consists of metric attributes and raw material composition of the assemblage. Previous analyses (Collins 1990) provide the basis for the analytical techniques employed in the current study. The raw material assemblage composition is presented followed by the technological/functional analysis.

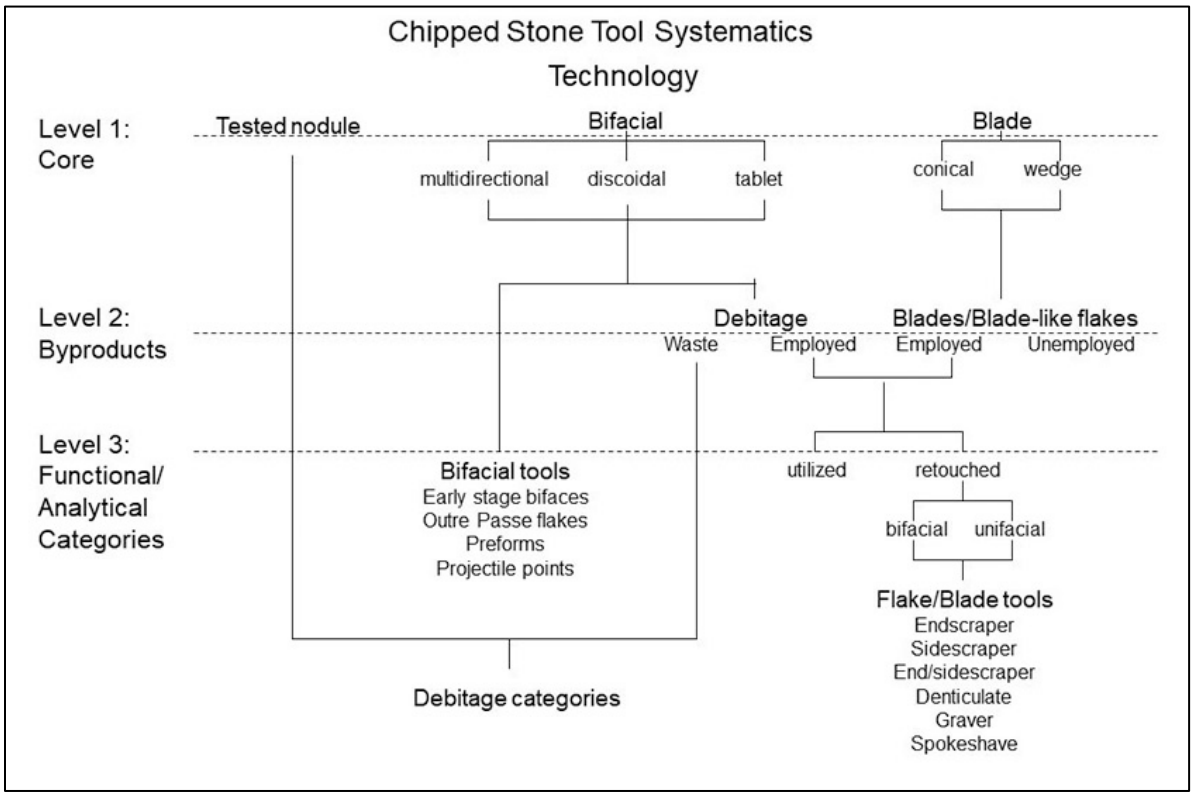


Figure 93. Systematic classification scheme.

Raw materials

Seven raw material types are represented in the chipped stone lithic assemblage analyzed. Waverly, a variety of Fort Payne chert also known as Buffalo River, is immediately available to the 40BN190 occupants and comprises the largest sample (*n*=486; 96.05%). Dover chert is available in the West Tennessee River Valley and is the second most highly represented material (*n*=11; 2.17%). Other varieties of Fort Payne chert are also locally available in the Tennessee Valley but poorly represented in the assemblage (*n*=5; .99%). A single example of an indeterminate conglomerate (0.002.%), possible St. Louis chert (0.002.%), possible Brasstown or agate (0.002.%), and indeterminate (0.002%). Flake tools are the most diverse group by raw materials with Waverly (*n*=90; 92.78%), Dover (*n*=4; 4.12%), Fort Payne (*n*=2; 2.06%), and conglomerate (*n*=1; 1.03%).

Bifaces are the second most diverse group with Waverly (*n*=167; 94.35%), Dover (*n*=7; 3.95%), Fort Payne (*n*=2; 1.13%), and indeterminate (*n*=1; .57%). Dover is represented by projectile points or fragments including a Cumberland, Beaver Lake, Quad (*n*=2), refined/advanced preforms (*n*=2), and a single biface. Fort Payne is represented by two moderately refined preforms/bifaces. The single indeterminate type is also represented by a projectile point distal.

Blades/blade tools and unifacial endscrapers are entirely represented by Waverly chert. A single core of the entire core sample is represented by possible Fort Payne variety while the remainder is Waverly.

The results are somewhat contradictory for expectations of raw material use. Expectations of raw materials use associated with an abundance of high-quality raw materials include less curation of informal tools, greater curation of formal tools, and much occurrence of locally available raw materials. Highly curated tools such as refined bifaces or projectile points should exhibit the most diversity as these tools would be transported more often and greater distances than other tool types. The occurrence of a diversity of raw materials, particularly within the projectile point sample is commensurate with expectations. Flake tools, conversely should exhibit the least amount of diversity as these are the least curated tools and an abundance of high quality, immediately available lithic resources suggest that this tool type should exhibit the least amount of diversity and curation.

The fact that the flake tool category represents the greatest diversity in terms of raw materials present presents the following implications. First, while only Waverly is immediately available, the other types are present in the general area in a significant enough quantity to be represented. Acquisition and transport to the site does not represent a significant degree of curation. Second, transportation either by direct diffusion or group movement occurred frequently enough to allow the minority chert types to be represented. As a whole, the lithic assemblage represents a significant dependence on locally available raw materials. Quarrying Waverly chert was a primary activity conducted at the site.

Initial Core Reduction

The first level of systematics is core selection and reduction method. This includes testing chert nodules or quarried tabular pieces. Initially, reduction results in the cobble being selected for either bifacial or blade production, with a considerable amount of overlap between the two. Core types defined in the current study include: (1) tested cobbles; (2) conical (blade) cores; (3) wedge-shaped, unidirectional blade cores; (4) wedge-shaped or similar, multi-directional, blade cores; and (5) bifacial cores. Frequency of each type of core is presented in Table 39.

Table 39. Summary of core types present in CCS assemblage.

Core Type	**#**
tested cobbles	19
conical (blade) cores	8
wedge-shaped,unidirectional blade cores	1
wedge-shaped or similar, multi-directional, blade cores	49
bifacial cores	6
Total	83

*Two cores are classified as type 1/2 (92-15-322) and type 3/4 (92-15-336) for a total of 85.

Distinct blade production is evident in Types 2 and 3. Type 4 is less distinctive and may resemble blade, or blade-like flake production, or bifacial reduction. A number of bifacial cores may have been initially categorized as large, early stage bifaces, rather than cores as well.

Bifacial Production

Over 170 artifacts (*n*=177) are characterized as bifacial artifacts. Distinct projectile points (*n*=10) include Clovis (*n*=3), Cumberland (*n*=1), Beaver Lake (*n*=3), and Quad (*n*=3). Other fluted bifacial artifacts (*n*=24) comprise an undiagnostic fluted point fragment (*n*=1), fluted preforms with overshot failures (*n*=14), mid to late stage fluted preforms (*n*=8), and fluted base fragment (*n*=1) are present.

Six bifaces have been categorized or described as bifacial cores or possible bifacial cores. Early stage bifaces are present (*n*=25), four of which exhibit basal thinning or early stage fluting. Three advanced preform or point fragments have been reworked to exhibit graver tips, one with a spokeshave. Two bifaces are bifacially worked blades. Artifact #92-15-1461 is a fluted, bifacially worked blade with beveled base. Artifact# 96-25-84 is a bifacially worked blade. The remaining bifacially worked sample consists of non-specific bifaces/preforms in mid to late stage degrees of reduction.

Blade Tool Production

One-hundred twenty nine tools have been recorded as the product of blade technology. This includes blades (*n*=82) blade knives (*n*=17), backed blade/knives (*n*=10) blade-like flakes (*n*=4), corner removal rejuvenation or keel blades (*n*=2), blades reworked into sidescrapers

(*n*=8), blades reworked into end/sidescrapers (*n*=2), blade with denticulate edge (*n*=1), and blade with graver tip (*n*=1).

Flake Tool Production

Ninety-seven flake tools are present in the Carson-Conn-Short assemblage. Flake tools are described by the number of working edges ("bits") and type of functional retouch. Bit numbers range from 1-4 (Table 40). Thirty-nine artifacts exhibit one bit, 43 exhibit two bits, 12 exhibit three bits, and one item exhibits four bits. One tool has an undetermined number of bits.

Table 40. Summary of flake tools.

Functional type	**Single Bit**	**Two bits**	**Three bits**
Denticulate	2	1	1
Flake knife	-	5	1
Knife	4	-	-
Graver	4	-	-
Graver/flake knife	-	4	1
Graver/scraper	-	1	-
Graver/sidescraper	-	-	1
Graver/spokeshave	-	1	-
Spokeshave	1	-	-
Spokeshave/reamer	-	1	-
Spokeshave/sidescraper	-	1	1
Sidescraper	25	24	3
Sidescraper/knife	-	1	1
End/sidescraper	3	4	3
Total	39	43	12

V. DISCUSSION AND CONCLUSIONS

Beaver Ponds

Charles Lyell (1830) coined the phrase "The present is the key to the past", when describing the principles of uniformitarianism as applied to the geologic record. We think this philosophy applies here at Carson-Conn-Short concerning Paleoindian age beaver ponds that would have been located at, and adjacent to, this site due to the geology, topography and hydrology given the beaver ponds visible today. The swale and levee topography created by the Tennessee River at this location adjacent to the eroding hillside creates an excellent opportunity for beaver dam construction (Figure 94). Water run-off from the hillside caught in these ancient beaver ponds would have provided an excellent and predictable fresh water source for Paleoindians and game alike (Figures 95-96). The beaver pond could also have been utilized as a kill site, providing a perfect opportunity to ambush game while watering. Similar geomorphology can be found throughout the Lower Tennessee River valley, possibly pointing to a predictive model for other Paleoindian occupation and/or kill sites.

Figure 94. Break between Area A (left) and Area F, adjacent to hillside.

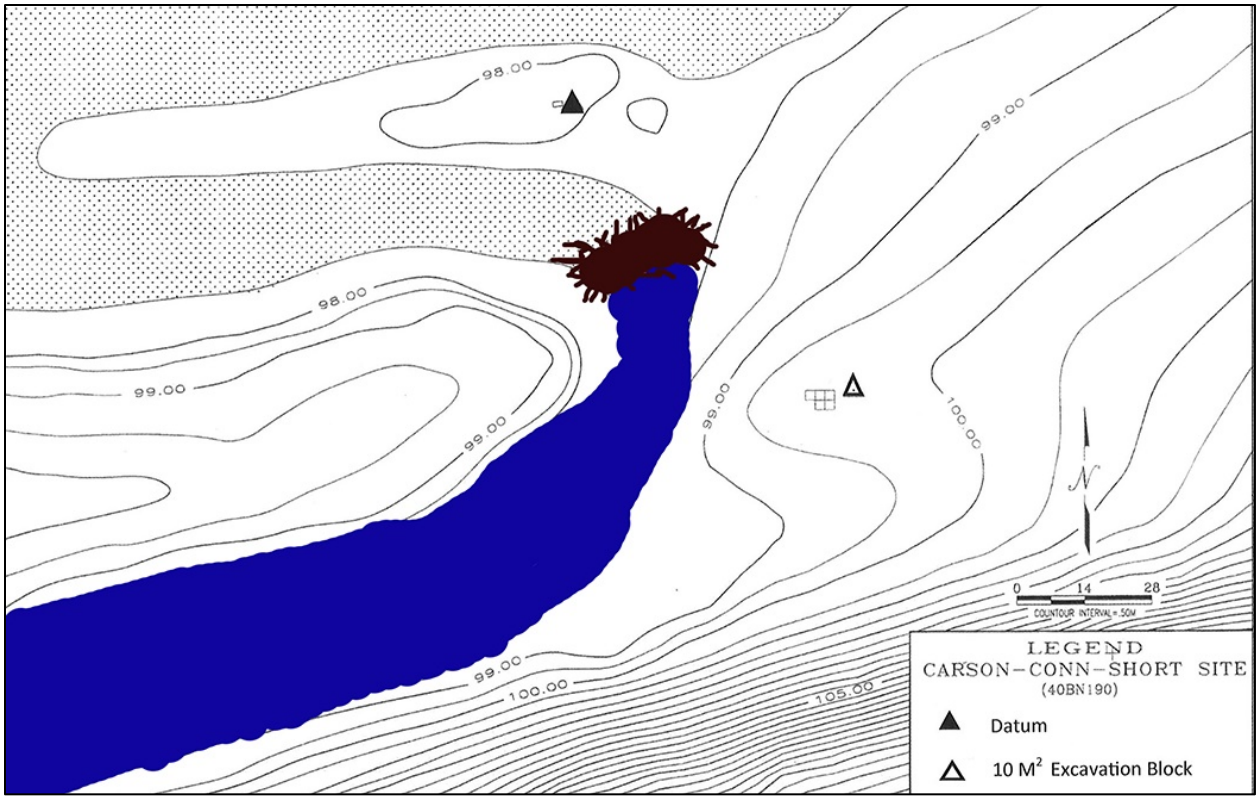


Figure 95. Topographic map of Area A with illustration of proposed beaver dam and pond.

Figure 96. Beaver pond located approximately 300 meters east of 40BN190 – between levee and hillside.

Water Craft

This site location along the Tennessee River and close proximity to the Duck River drainage supports the inference by many researchers concerning the use of water craft by Paleoindians (Anderson et al. 2015 Dixon 1999; Jodry 2005). At Carson-Conn-Short, at least five wood working adzes have been recognized within the artifact assemblage. These artifacts were collected from the surface, so it is difficult to prove that they are of Pleistocene age. One specimen made on a large prismatic blade flake is particularly intriguing (Figure 97, top left). Chipped adzes have been documented at other Paleoindian sites in the eastern woodlands such as Shoop in Pennsylvania (Carr et al. 2013), Topper in South Carolina (Smallwood et al. 2013), and Sloan in Arkansas (Morse 1971).

Figure 97. Chert adzes from Carson-Conn-Short. The specimen at top left is made on a prismatic blade flake.

Concluding Remarks

Thanks to Kit Carson, Hal Short, and Gary Conn we have been collecting Paleoindian data at 40BN190 since 1992. This site includes Paleoindian age sites 40BN18 on the eastern edge and 40BN65 on the west. We found numerous concentrations of Paleoindian age artifacts on the ancient levees of the Tennessee River including fluted projectile points, fluted preforms, blade tools, blade cores, overshot flakes, and other unifacially worked flake tools. In addition, we conducted surface collections in each of these areas as well as controlled surface collections in four of these locales. Test excavations were also carried out that determined intact Paleoindian deposits are located here.

This site complex is located on, and around, a cherty colluvial fan deposit derived from the eroding hillside of Fort Payne limestone and associated Waverly variety chert. Initially we concluded this location was chosen due to the chert deposit. Now we believe a broader set of variables explain why Paleoindians chose this locale, such as: (1) location adjacent to the Tennessee River; (2) excellent toolstone; (3) fresh water springs and beaver ponds, and (4) a broad floodplain to the north and near the mouth of the Duck River. Natural resources of the Tennessee River valley as well as the West Tennessee uplands to the west and the uplands of the Western Highland Rim by the Duck River are accessible from this location.

All areas of the site show some form of erosional effects from the creation of Kentucky Lake along with the water level fluctuations. Our test excavations here indicate the lower beach of Area A, Cumberland Island, Areas E and H are completely deflated. Auger tests provided by Dr. Haynes on the fan portion of Area A have demonstrated a buried level of cultural debris at a depth of 1.0 to 1.25 meters below the present surface. This matches the elevation of the deflated beach, which has produced hundreds of fluted points, preforms, and uniface tools in Area A. A small blade tool fragment was recovered at a depth of one meter in one of the auger holes. A 12 m^2 block was excavated revealing intact deposits. The artifact density within this block shows the possibility of at least two separate Clovis occupations. The final level (5) has relatively few artifacts, all located within the top portion of the strata. Artifacts are consistently of Clovis age throughout the deposit. The only exceptions are a Big Sandy I projectile point (early Archaic) and a Benton projectile point (middle Archaic) found on the surface of the excavation unit.

It appears that early and late occupations by Clovis peoples may be present in area A. This observation is based upon two distinct styles of fluting represented in the artifact assemblage. We have observed that all of the fluted preforms from Area A (n=423) were fluted using a beveled base, with striking nipples not in evidence. This style of fluting has been described as Ross County (Perino 1971). In contrast, the Cumberland and some other fluted preforms from other areas of the site were fluted with the use of a very pronounced striking nipple, which is a more refined fluting technique and considered later than the bevel base style.

A total of some 1,765 tools (projectile points, unifaces, gravers, etc.) have been mapped, excavated, or donated during the investigation of the site (Table 39). All but approximately a dozen artifacts are classified as being Paleoindian. This is quite unusual for any site in the Western Valley or for the Southeast in general. The Carson-Conn-Short site has great potential

for helping to define and understand the full range of Paleoindian occupation in the mid-south. A clearer understanding of lithic reduction sequences is possible using the data from this very important site.

The number of expended Clovis projectile points and preforms obviously supports a primary function of this area was the production of Clovis spear points. Additionally, the number of blades and blade cores speak to the production of uniface tools. The high number of tertiary flakes suggests that in the case of projectile point production that cortex trimming and very early stage biface production took place at another location. These initial reductions taking place at the quarry located approximately 100 meters to the south of the excavation unit would support this observation.

Carson-Conn-Short shares some similarities to the Nuckolls site (40HS60), located approximately 22 miles downriver. Nuckolls was a heavily reused Paleoindian base camp associated with lithic procurement from nearby quarries (Ellerbusch 2004; Nuckolls 1958; Lewis and Kneberg 1958; McNutt and Graham 1967; Norton and Broster 1992). While both sites were occupied during Clovis or the early Paleoindian period, Nuckolls has a much heavier Dalton or late Paleoindian presence. The light presence of late- Paleoindian/Early Archaic occupation at 40BN190 could be due to the migration of the Tennessee River channel as this time frame is well represented at the Kirk Point Site (40HS174), and Big Bottom site (40HS60) to the north (McNutt et al. 2008).

This site is also similar to what has been documented in the southern portion of the Tennessee River valley in north Alabama. It has a nearly identical geographic site location as the Quad Complex or Coffee Slough series of sites, located adjacent to the hillside along relic channels of the Tennessee River (Hulse and Wright 1989; Hubbert 1989). We think geographically similar locales throughout the Tennessee River Valley may provide a predictive model for other Paleoindian sites.

We concur with Paleoindian archaeologists who have suggested boat usage by the early colonists of the new world (Dixon 1999; Jodry 2005). We think the first Paleoindians to visit this locale could have discovered the cherty fan by water as the fan extends to the banks of the relic Tennessee River. The quality of the chert within the fan would have led them to the toolstone outcrops upstream in the heavily dissected Fort Payne limestone formations located here.

We suggest boats were also utilized here to implement hunting and foraging forays into multiple nearby environments and ecotones of the Western Valley, Western Highland Rim, and the Coastal Plains physiographic regions. Boats also could have been implemented in the hunt as well, if Paleoindians utilized the hilltop above the site to view herd movement on the broad floodplain north of the site. Once movement is spotted, hunters proceed downhill to boats along the Tennessee River, travel both up and downstream to drive, hunt and ambush the game.

Paleoindian age beaver ponds would provide a reliable, fresh water source that both Paleoindians and game would benefit from. The beaver pond could also have been utilized as a kill site, by ambushing game while watering.

The limited excavations at the Carson-Conn-Short site (40BN190) have shown the potential for in situ eastern Clovis deposits in the Western Valley of Tennessee. In parts of the site, occupation has been recorded at depths of some 45-68 cm below present ground surface. The prospect of performing spatial analysis of features and associated tools is extremely important for understanding Clovis technology and cultural adaptations in the Southeast.

The Carson-Conn-Short site displays a very different situation than recorded on Clovis sites from the western United States. In general, sites in the Plains and the Southwest are overly representative of hunting and butchering events associated mostly with mammoth and some bison procurement. Complete projectile points and butchering tools are generally the predominate tool types recovered in excavation. In the West, sources of good quality lithic materials are widely dispersed with a tendency for utilization of tools past the point at which they would have been discarded at the Carson-Conn-Short site.

Lithics of high quality are readily available in the Western Valley of Tennessee. Quarry areas are located on both sides of the river and most, if not all have been in use since Clovis times with a trend towards greater localization and less diversity (Jones 2007, 2010). Sites in the area conform to maintenance /rearmament camps or in the case of 40BN190 to a more extensive quarry/workshop situation. The Carson-Conn-Short site may also be the culmination of general use of the area for seasonal basecamps during the Paleoindian period.

The site is located adjacent to Mississippian age limestone deposits that contain Buffalo River chert, a regional variant of Fort Payne chert. All of the artifacts recovered at this locale are fashioned from this toolstone with the exception of a relatively small number of classic Dover and Fort Payne varieties as well as a few unidentified varieties. Modern flint knappers also provide insights to Paleoindian behavior when talking about the Buffalo River chert that is found at this site location. Modern knappers typically heat treat this variety of toolstone to increase its workability. We think Paleoindians were heat treating early stage preforms, and block cores here within the circular features that have been documented along the exposed beach areas of the site complex. Our efforts to date those features failed with Test Unit 8 (Broster and Norton 1999), when Feature 3 provided Archaic period dates. However, we know some of these features were utilized in Paleoindian times due to the evidence of heat treated Paleoindian points, cores and blade tools recovered from these circular, basin shaped features.

Additionally, the locally available Buffalo River chert is rarely found beyond the drainage of the Western Valley. This supports the belief that the home range of the local Clovis population was rather restricted when compared to western Clovis and later Folsom groups of the American West. Band movement of the occupants of 40BN190 seems to have been confined to the main river system. Further work is needed to establish the extent of the local lithic materials as they are found along the Tennessee River from Alabama to the southern border of Kentucky. Movement along the river, north and south, may have been more important than any east-west migration. Other distinct groups may have been located along the Cumberland and Mississippi River drainages. This type of settlement pattern does fit well with some established models of Paleoindian behavior for the Southeast as defined by Meltzer (1984, 1988) as a generalized forager strategy.

The numerous fluted points and sites in the Western Valley and in Tennessee in general, are a possible indicator that the Southeast may have been a major loci for initial colonization of Clovis peoples, and the area may represent one of the first staging area for the peopling of the New World as defined by Anderson (1992). Upon entering the chert rich limestone deposits of the Tennessee River valley, chert procurement and use strategies changed dramatically.

It is hoped that datable materials will be recovered from the buried section of the Carson-Conn-Short site, which will shed light on its placement in the temporal framework of the development of early Paleoindian cultures. The quest for answers is the important consideration, regardless of which proves to be older. We look forward to the continuation of research on this and many other questions concerning time and social aspects of human adaptations for this very interesting period of time. The Paleoindian experience in the Southeast deserves nothing less than a full effort toward these goals.

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APPENDIX A:
ARTIFACTS FROM POINT PROVENIENCE MAP OF AREA A

Clovis preform base
92-15-1439

Biface/preform
92-15-12

Biface/preform
92-15-710

Clovis preform
95-1-1

Blade
92-15-7

Endscraper/sidescraper
92-15-10

Biface
92-15-16

Clovis preform
92-15-24

Biface/preform
92-15-33

Blade proximal
92-15-46

Blade core fragment
92-15-51

Blade knife
92-15-56

Blade knife/graver distal
92-15-60

Endscraper
92-15-92

Blade knife
92-15-301

Blade
92-15-303

Blade knife
92-15-307

Biface distal
92-15-316

Biface preform fragment
92-15-318

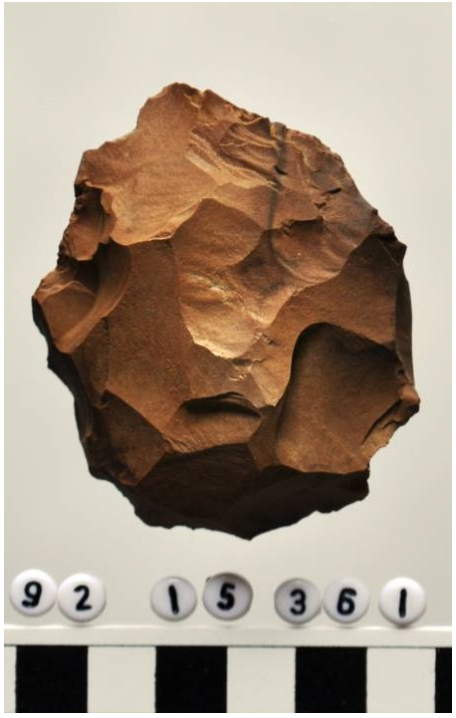
Biface
92-15-330

Flake knife
92-15-332

Sidescraper
92-15-343

Biface fragment
92-15-348

Backed knife
92-15-354



Biface
92-15-361

Backed knife
92-15-367

Biface fragment
92-15-368

Biface fragment
92-15-378

Biface/preform fragment
92-15-382

Endscraper
92-15-391

Biface/preform distal
92-15-394

Blade knife
92-15-395

Biface/preform fragment
92-15-396

Blade knife proximal
92-15-397

Block core
92-15-398

Blade-like flake knife
92-15-400

Biface/preform fragment
92-15-402

Endscraper/graver
92-15-403

Flake knife
92-15-409

Sidescraper
92-15-410

Bifacial core
92-15-415

Endscraper
92-15-512

Flake knife
92-15-677

Flake knife
92-15-673

Biface/preform fragment
92-15-676

Sidescraper
92-15-690

Sidescraper proximal
92-15-693

Blade knife proximal
92-15-695

Blade knife proximal
92-15-697

Blade knife
92-15-698

Blade knife
92-15-700

Sidescraper
92-15-707

Blade
92-15-703

Sidescraper
92-15-714

Graver/spokeshave
92-15-716

Flake knife
92-15-719

Block Core
92-15-720

Overshot flake
92-15-721

Block core
92-15-725

Blade knife
92-15-729

Sidescraper
92-15-730

Biface/preform fragment
92-15-732

Blade proximal
92-15-734

Biface/preform
92-15-737

Sidescraper
92-15-739

Backed knife proximal
92-15-740

Flake knife
92-15-745

Biface/preform fragment
92-15-747

Biface/preform
92-15-748

Blade
92-15-749

Blade
92-15-750

Biface/preform
92-15-751

Flake knife
92-15-752

Sidescraper
92-15-755

Scraper fragment
92-15-756

Biface/preform
92-15-758

Blade knife
92-15-760

Blade-like knife
92-15-766

Blade
92-15-769

Denticulate
92-15-773

Blade
92-15-775

Biface/preform
92-15-781

Blade
92-15-782

Spokeshave
92-15-883

Blade core
92-15-1196

Clovis preform base
92-15-1431

Blade knife
92-15-1436

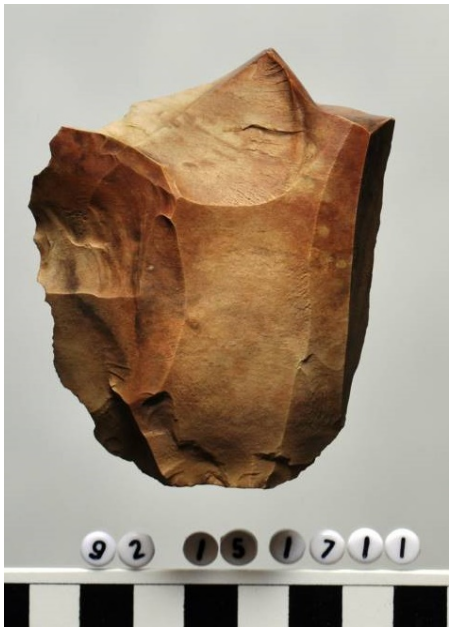
Biface distal
92-15-1437

Biface fragment
92-15-1445

Endscraper/sidescraper
92-15-1455

Clovis preform base
92-15-1580

Overshot flake fragment
92-15-1654

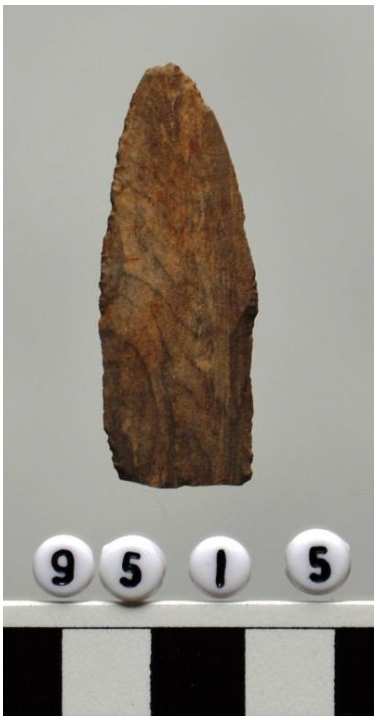


Clovis preform base
92-15-1711

Clovis preform distal
92-15-1712

Clovis perform distal
95-1-3

Biface distal
95-1-4



Blade distal
95-1-5

Blade
95-1-6

Blade proximal
95-1-7

Blade knife proximal
95-1-8

Endscraper
95-1-10

Blade
95-1-12

Blade core
95-1-13

Flake scraper
95-1-14

Blade - Backed knife
95-1-15

Blade
95-1-17

Blade core
95-1-18

Biface/preform distal
95-1-25

Biface/preform distal
95-1-39

Blade core
98-1-255

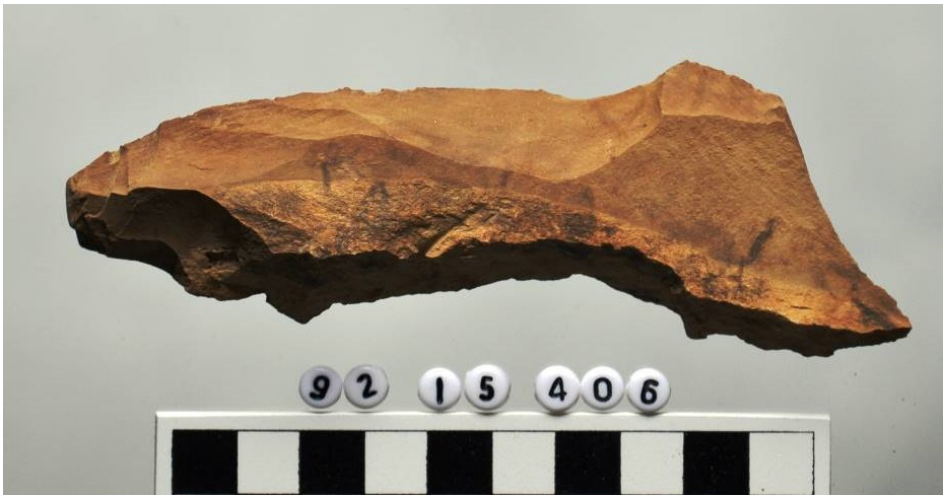
Blade core
99-1-83

Blade knife
99-1-87

Blade
99-1-102

Biface fragment
99-1-121

Blade knife
92-15-21



Blade knife
92-15-406

Biface/preform proximal
92-15-36

Blade knife
95-1-22

Clovis preform
92-15-48

Biface/preform
92-15-49

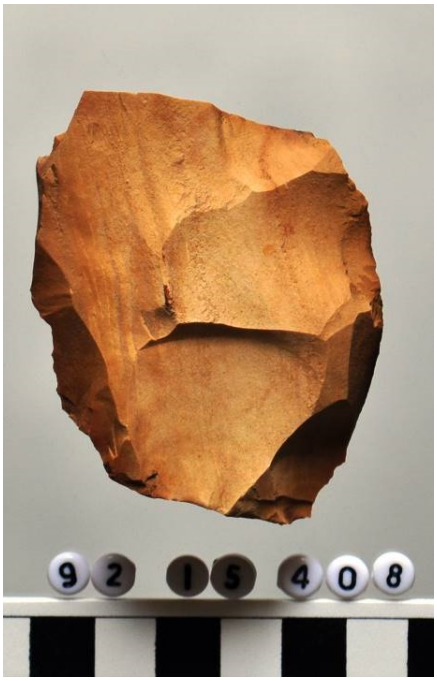
Sidescraper
92-15-58

Sidescraper
92-15-88

Blade knife
92-15-195

Blade
92-15-317

Biface/preform distal
92-15-352



Clovis preform proximal
92-15-408

Blade
92-15-718

Blade proximal
92-15-757

Blade knife
92-15-761

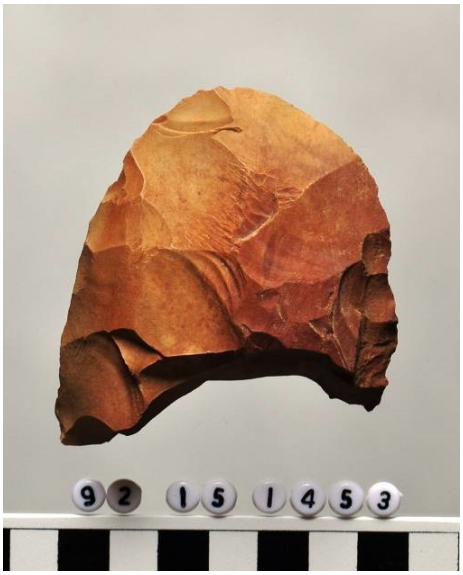
Endscraper/sidescraper distal
92-15-765

Sidescraper
92-15-768

Sidescraper
92-15-774

Endscraper/sidescraper
92-15-1434

Sidescraper/knife
92-15-1444



Biface fragment
92-15-1453

Endscraper
92-15-4

Sidescraper
92-15-8

Endscraper/sidescraper
92-15-9

Endscraper/sidescraper
92-15-15

Blade core - exhausted
92-15-22

Clovis preform fragment
92-15-27

Flake knife
92-15-32

Clovis preform midsection
92-15-34

Biface/preform distal
92-15-39

Biface/preform midsection
92-15-41

Sidescraper
92-15-61

Sidescraper
92-15-70

Endscraper
92-15-71

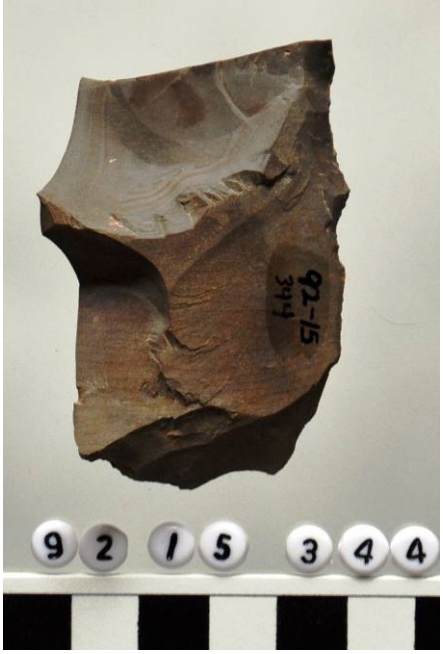
Endscraper
92-15-77

Biface/preform proximal
92-15-306

Biface/preform fragment
92-15-309

Sidescraper proximal
92-15-310

Sidescraper fragment
92-15-313



Sidescraper fragment
92-15-344

Sidescraper
92-15-353

Sidescraper
92-15-364

Sidescraper
92-15-383

Biface/preform proximal
92-15-393

Biface/preform
92-15-407

Sidescraper
92-15-416

Flake knife
92-15-1448

Biface fragment
92-15-674

Biface/preform
92-15-679

Overshot flake
92-15-686

Sidescraper
92-15-687

Flake knife
92-15-694

Flake scraper
92-15-696

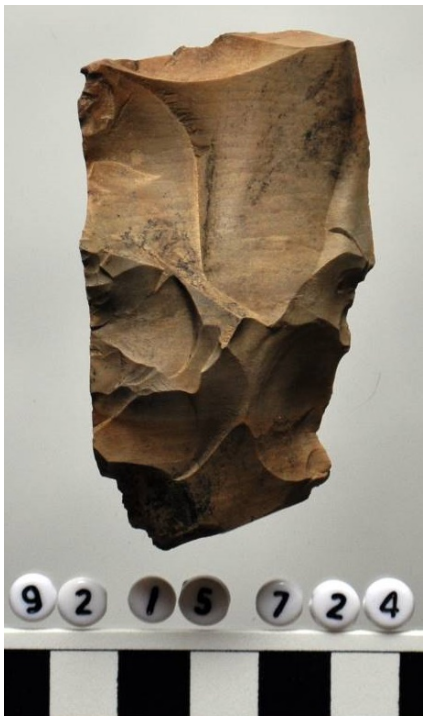
Flake knife
92-15-701

Flake knife
92-15-702

Preform proximal
92-15-703

Blade-like flake
92-15-709

Sidescraper
92-15-723



Sidescraper on core fragment
92-15-724

Flake scraper
92-15-736

Biface/preform
92-15-746

Sidescraper
92-15-759

Blade knife
92-15-763

Biface/preform
92-15-771

Flake knife
92-15-780

Blade knife
92-15-784

Sidescraper
92-15-1200

Endscraper/sidescraper
92-15-1432

Flake knife
92-15-1435

Sidescraper/knife
92-15-1710

Endscraper/sidescraper/
graver
96-25-5

Clovis preform
96-25-8

Blade
96-25-12

Blade
96-25-15

Channel flake
96-25-21

Biface
96-25-23

Biface fragment
96-25-32

Blade knife
96-25-35

Flake knife
96-25-39

Biface fragment
96-25-42

Overshot flake
96-25-50

Sidescraper
96-25-58

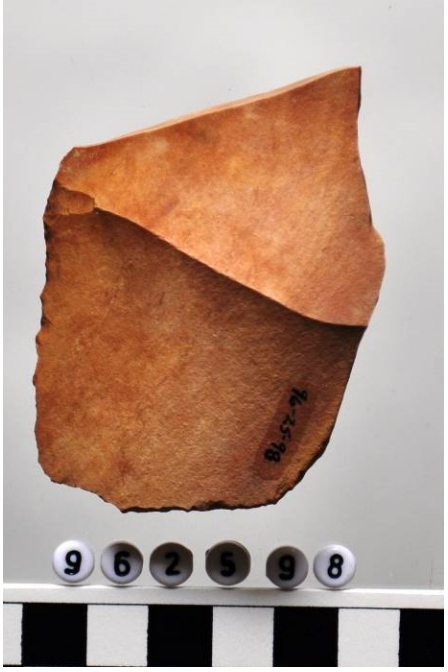
Blade knife fragment
96-25-59

Flake knife
96-25-64

Endscraper
96-25-77

Utilized flake
96-25-81

Biface
96-25-84



Utilized flake
96-25-98

Biface fragment
96-25-99

Biface preform
96-25-114

Utilized flake
96-25-113

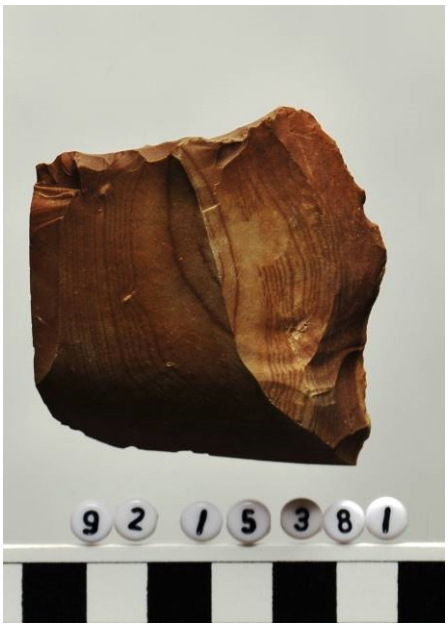
Overshot flake
96-25-93

Biface/preform
92-15-311

Blade knife
92-15-333

Biface
92-15-336

Blade core fragment
92-15-373



Blade core fragment
92-15-381

Blade knife
92-15-727

Sidescraper
92-15-731

Blade core
92-15-741

Blade-like flake
92-15-793

Blade knife
92-15-1455

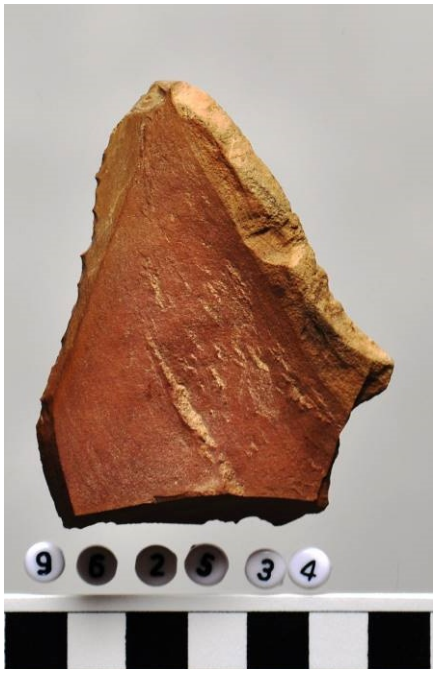
Preform distal
95-1-37

Core rejuvenation flake
96-25-1

Clovis preform fragment
96-25-11

Channel flake
96-25-20

Blade knife
96-25-33



Flake knife
96-25-34

Blade knife
96-25-44

Preform base
96-25-49

Blade
96-25-53

Biface fragment
96-25-60

Overshot Flake
96-25-76

Overshot flake
96-25-80

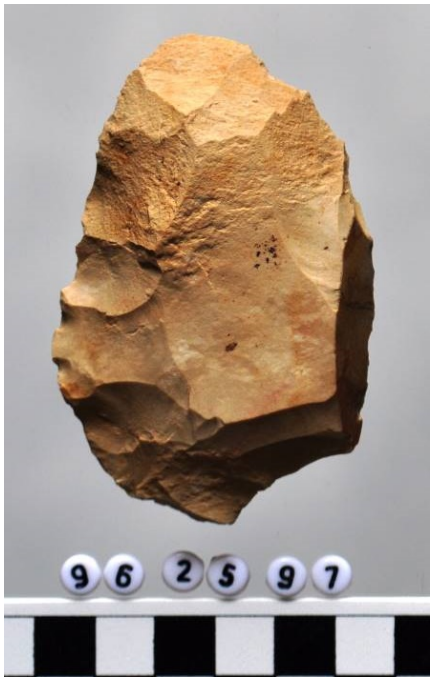
Blade
96-25-83

Sidescraper
96-25-85

Blade knife
96-25-88

Biface
96-25-92

Blade knife
96-25-90



Biface
96-25-97

Blade knife proximal
96-25-101

Biface fragment
96-25-107

Clovis preform base
99-1-84

Biface fragment
96-25-108

Biface
96-25-111

Blade core
96-25-163

Blade core
92-15-45

Blade core
92-15-778

Blade core
92-15-319

Blade core
92-15-334

APPENDIX B:
POINT PROVENIENCE ARTIFACTS FROM CUMBERLAND ISLAND

Biface/preform
92-15-1568

Biface fragment
98-1-147

Clovis preform
00-1-80

Clovis preform base
00-1-682

Clovis preform base
92-15-44

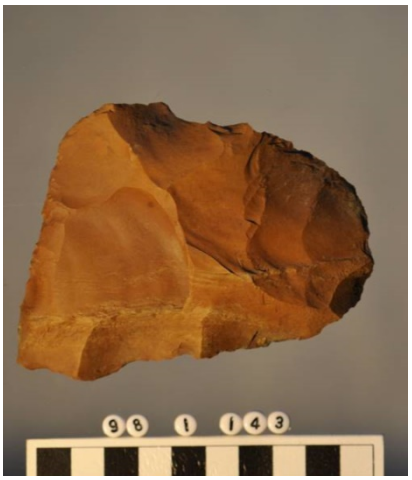
Clovis preform base
92-15-1575

Clovis preform distal
00-1-420

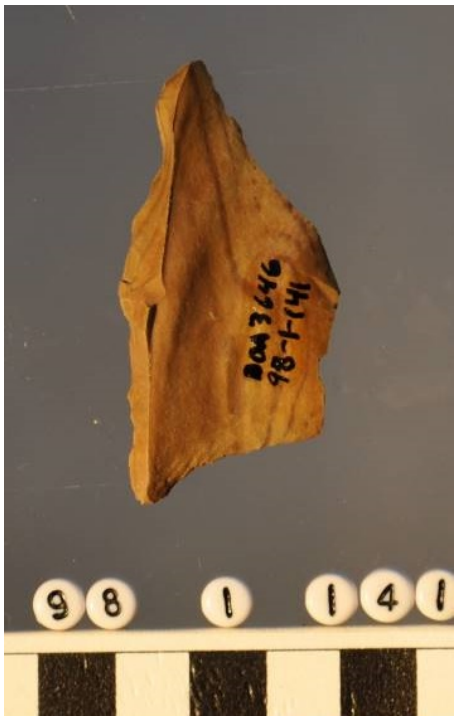
Preform distal
92-15-1713

Preform distal
92-15-437

Sidescraper
92-15-1717

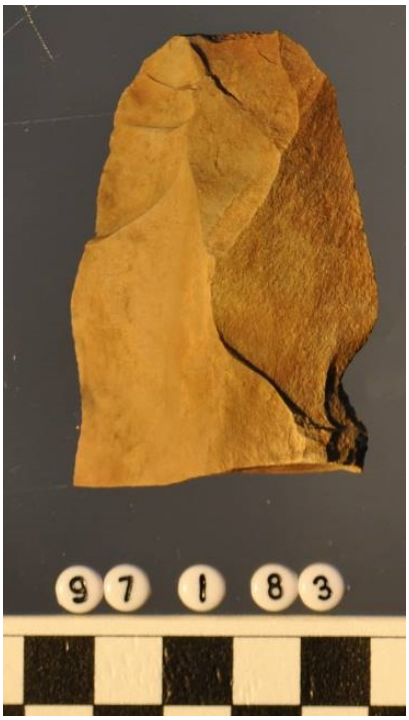


Overshot flake
98-1-143



Overshot flake
98-1-141

Blade proximal
97-1-80



Blade proximal
97-1-83

Clovis preform
97-1-75

Block core
92-15-1574

Blade knife distal
98-1-151

Core
92-15-1572

Clovis preform
98-1-146

Biface/preform
92-15-430

Biface
92-15-898

Lunate knife
98-1-150

Core
92-15-1571

Sidescraper
97-1-82

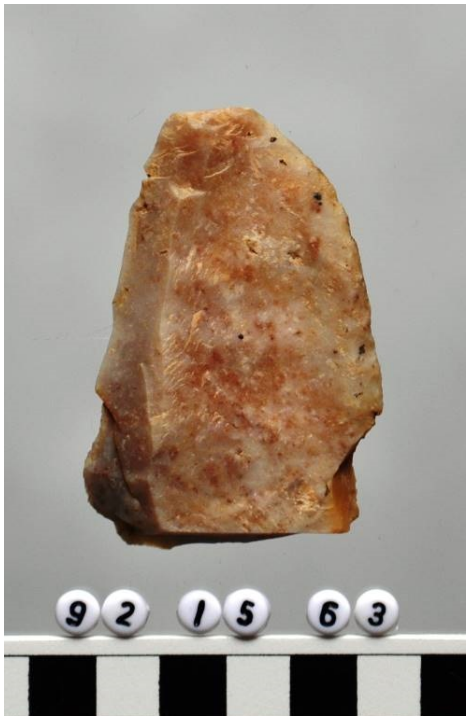
Blade proximal
98-1-140

Sidescraper
92-15-1719

Sidescraper/Endscraper distal
98-1-148

Sidescraper midsection
97-1-78

Knife
97-1-79



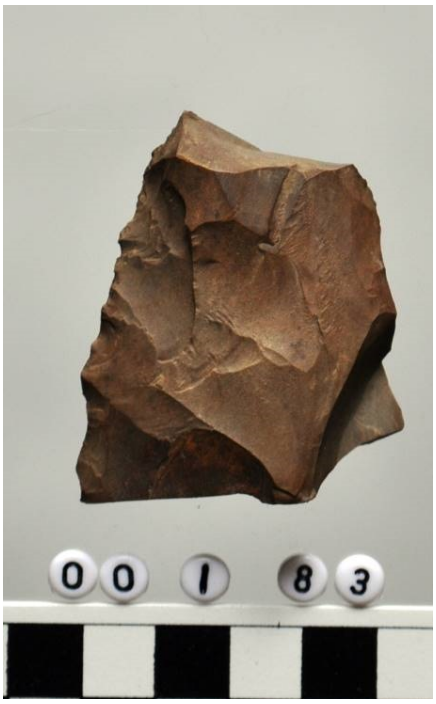
Blade knife proximal
92-15-63

Quad PPK
00-1-307

Clovis PPK
00-1-306

Quad PPK
02-1-371

Clovis preform distal
00-1-81



Biface fragment
00-1-83

Biface/preform fragment
99-1-44

Biface/preform fragment
99-1-27

Sidescraper on blade
99-1-25

Blade knife fragment
95-1-34

Biface/preform base fragment
99-1-44

Biface/preform midsection
02-1-83

Clovis preform
00-1-249

Biface
99-1-21

Sidescraper
92-15-1716

Blade knife
92-15-35

Overshot flake
92-15-1458

Unfluted Cumberland Base
98-1-242

Cumberland Base
00-1-304

Beaver Lake
01-1-34

Quad preform
02-1-251

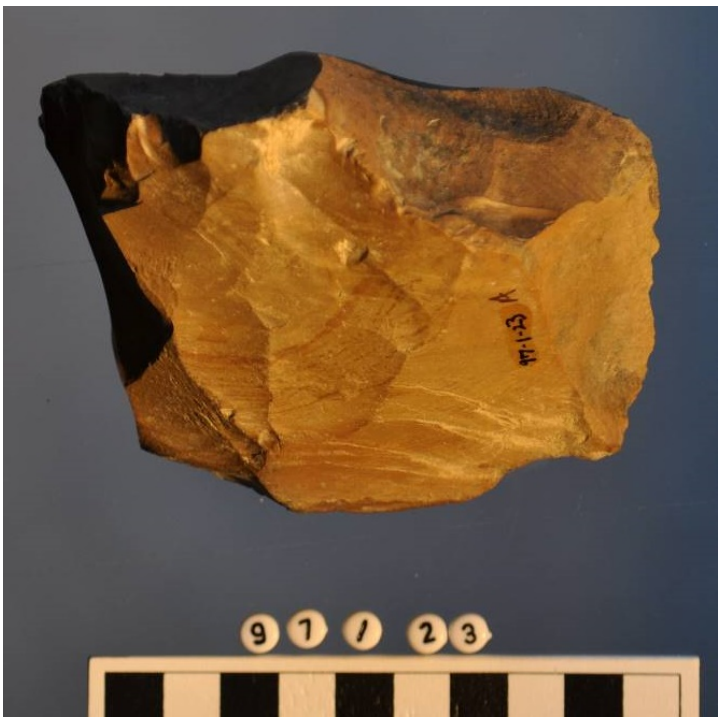
Clovis preform base
92-15-438

Sidescraper
99-1-24

Beaver Lake preform base
02-1-373

Sidescraper/Endscraper
92-15-431

APPENDIX C:
POINT PROVENIENCE ARTIFACTS FROM AREA D



Blade core
97-1-23

Blade
97-1-58

Blade
97-1-60

Biface distal
98-1-32

Late stage Clovis preform base
96-25-126

Biface/preform
97-1-67

Overshot flake
98-1-171

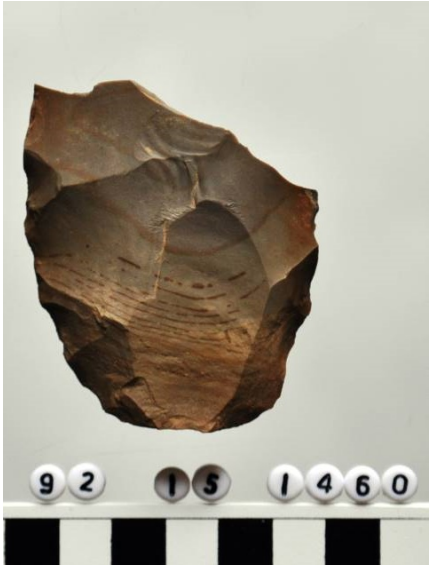
Overshot flake
97-1-30

Blade core fragment
92-15-897

Overshot flake
98-1-33

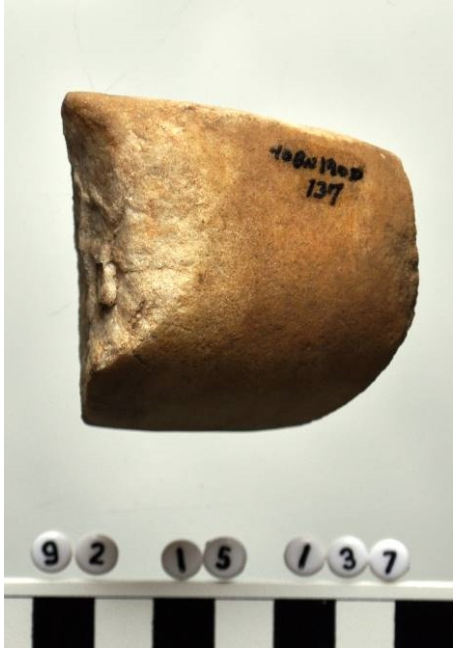
Clovis
96-25-156

Clovis preform base
00-1-435



Clovis preform base
92-15-1460

Clovis preform base
92-15-138

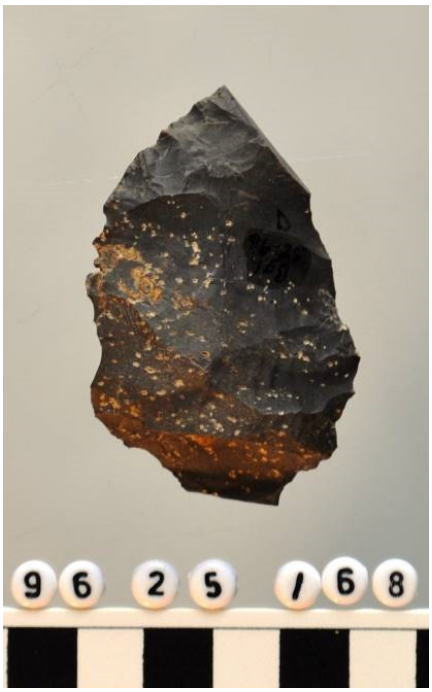


Hammerstone
92-15-137

Clovis preform fragment
92-15-141

Clovis preform base
95-1-45

Biface fragment
96-26-170



Preform distal
96-25-168

Sidescraper
00-1-738

Blade
97-1-25

End thinning flake
98-1-45

Biface fragment
97-1-27

Endscraper
96-25-157

Biface fragment
97-1-26

Biface/preform
97-1-69

Overshot flake
97-1-62

Blade knife
97-1-29

Biface
97-1-63

Blade core
98-1-37

Blade
98-1-168

Blade fragment
98-1-67

Biface/preform
92-15-448

Clovis preform base
97-1-71

Sidescraper
92-15-142

Clovis knife base
98-1-38

Blade
95-1-44

Biface
96-25-171

Clovis preform base
97-1-64

Biface/preform
97-1-65

Biface/preform
98-1-31

Blade
98-1-34

Blade core
98-1-39

Sidescraper
98-1-41

Biface
98-1-42

Clovis preform fragment
97-1-66

Biface/preform fragment
98-1-69

Blade core
98-1-170

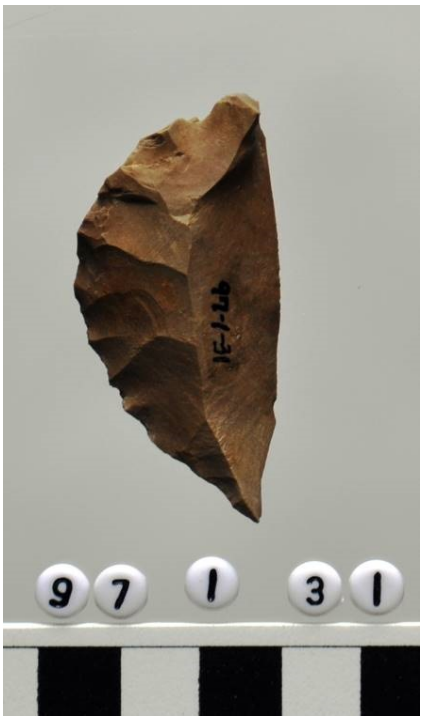
Blade knife
98-1-248

Clovis preform base
02-1-374

Clovis preform base
02-1-375

Clovis preform fragment
92-15-1461

Biface/preform
97-1-65



Biface fragment
97-1-31

Blade knife
97-1-59

Blade
98-1-36

Blade
98-1-167

Block core
98-1-40

Hammerstone
98-1-49

Blade
98-1-46

Biface preform fragment
98-1-68

APPENDIX D:
POINT PROVENIENCE ARTIFACTS FROM AREA F

Clovis preform base
02-1-30

Hammerstone
92-15-1284

Biface fragment
92-15-1290

Sidescraper
92-15-1294

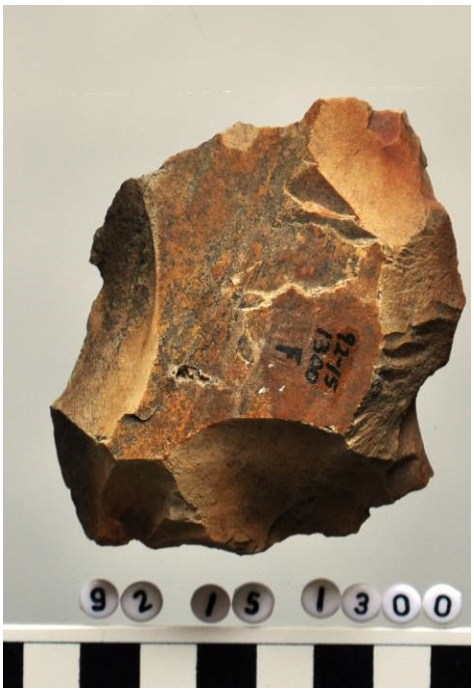
Block core
92-15-1283

Preform fragment
92-15-1289

Sidescraper
92-15-1292

Endscraper/sidescraper
92-15-1296

Block core
92-15-1297



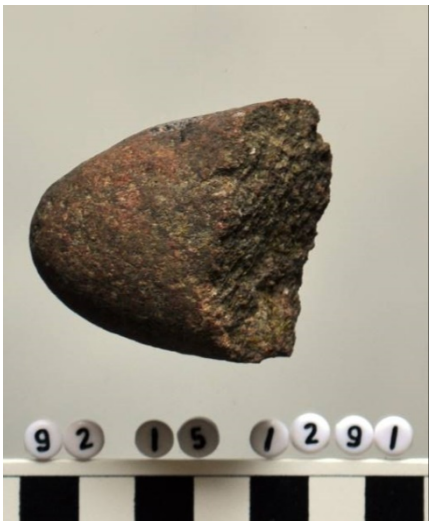
Biface fragment
92-15-1300

Hammerstone
92-15-1295

Hammerstone
92-15-1293

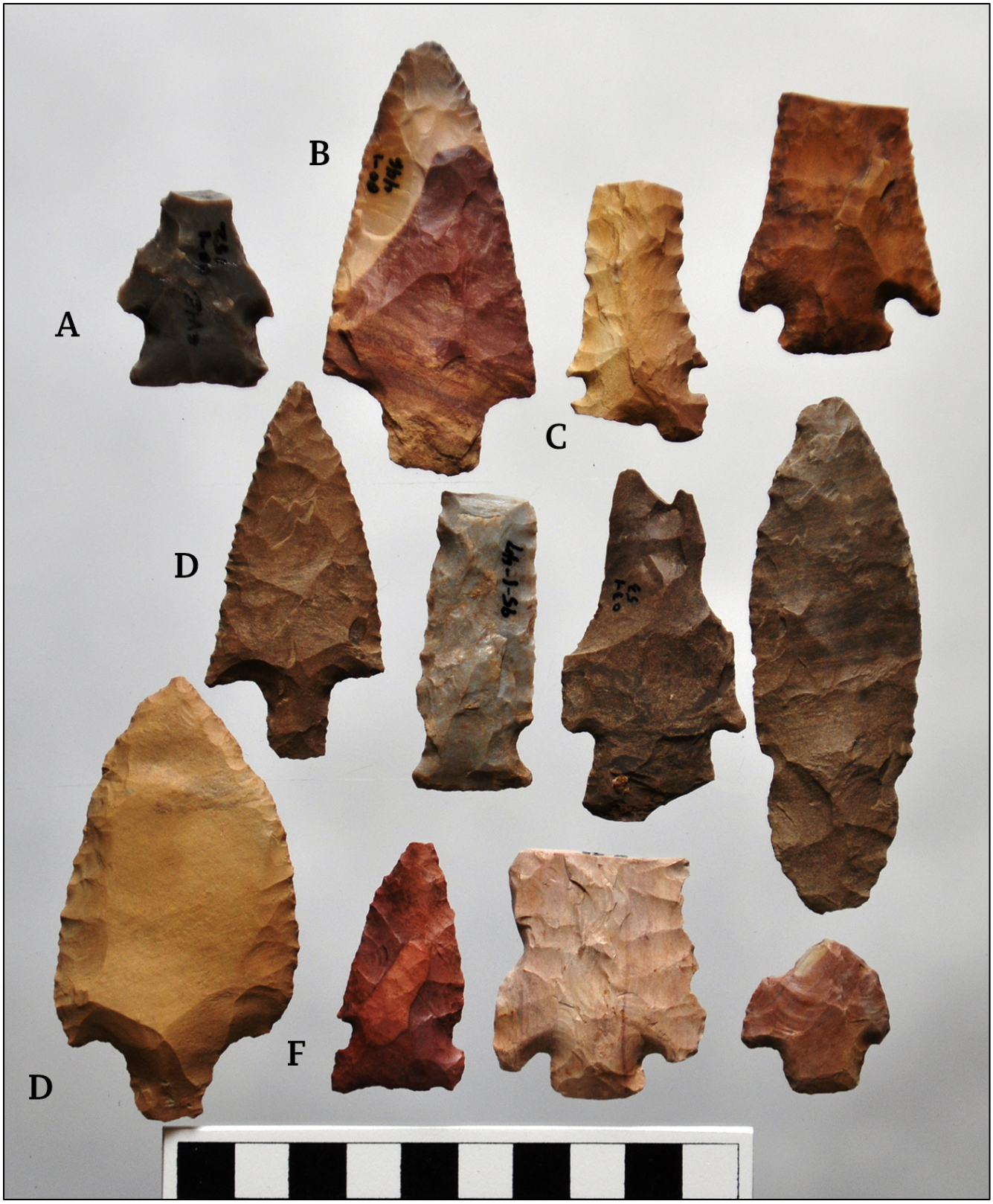
Block core
92-15-1286

Hammerstone
92-15-1287



Hammerstone
92-15-1291

APPENDIX E:
ARCHAIC AND WOODLAND PERIOD PROJECTILE POINTS



Archaic and Woodland projectile points from 40BN190: (A, Area A) Lost Lake; (B, Area B) Pickwick; (C, Area C) Big Sandy, Kirk Corner-Notched variant; (D, Area D) Little Bear Creek, Lowe Cluster, Big Slough, Adena, stemmed (possibly Late Archaic; made on a blade flake); (F, Area F) Big Sandy, Stemmed Late Archaic/Woodland.