

Illinois State Archaeological Survey Research Reports

Late Woodland Communities in the American Bottom: The Fish Lake Site

edited by
Andrew C. Fortier

*Brenda E. Beck, Amanda J. Butler, Madeleine G. Evans,
Andrew C. Fortier, Steven R. Kuehn, Kathryn E. Parker, Alexey Zeltin*



 **ILLINOIS STATE
ARCHAEOLOGICAL SURVEY**
PRAIRIE RESEARCH INSTITUTE

 **ILLINOIS**
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Research Report 28

Published by the Illinois State Archaeological Survey. 2015. 340 pp., \$29.00 (paper).

Copyright © 2016 Midwest Archaeological Conference, Inc. All rights reserved.

The Fish Lake Locality, located in the central American Bottom floodplain, was the focus of a major concentration of Late Woodland habitation, dating to the Patrick phase or circa cal A.D. 650–900. The most prominent of the occupations fall within the Fish Lake site proper. The Fish Lake site actually consists of at least three distinct community patterns. Excavations by ISAS here have yielded well over 700 pits and structures, including several large public buildings and multiple household units. One of the community patterns consists of a northeast-southwest line of keyhole structures, oriented to the east, bracketed by two public buildings that are surrounded by hundreds of pits. Another pattern consists of a horseshoe shaped cluster of small keyholes and rectilinear post structures surrounding a dense grouping of refuse and storage pits, and marked by a central, deep multi-fill pit with a unique rectilinear plan shape. A third pattern is simply a dispersed cluster of households along a ridge that probably represent a multi-year occupation of individual families or small hamlets. This report introduces the concept of individual household space, i.e., consistent areas of open terrain between houses and pits, regardless of the overall community pattern. The absence of pits inside houses also underscores the differentiation between private and communal space.

The identification of so many settlement types in the same location and same period of time throws a great deal of light on how socially complex this time period was, something that has been undervalued in previous studies. Such diversity has been previously recognized at the nearby Range site but not at smaller encampments from this period. One important result of both excavations is that the larger more complex settlements such as Fish Lake and Range were not dependent on maize agriculture, i.e., large population growth in the American Bottom prior to cal A.D. 900 was not economically based on a single crop. We now must look for other explanations for how communities like Fish Lake and Range were able to take root in this area, and provide for the basis of the eventual events that led to the development of Cahokia. Community harvests and hunts and social/ritual fandangos may have had as much to do about the emergence of complexity as economy and landscape stability. One of the significant aspects of this report is the presentation of Late Woodland materiality in great detail. Hopefully this report will provide a baseline for future research and a better understanding of the Late Woodland period in general.

Contents

List of Figures.....	ix–xli
List of Tables	xlii–xlv
Abstract.....	xv
Acknowledgments	xvii
1 Introduction, Andrew C. Fortier	1
2 Site Location, Physiography, and Local Resources, <i>Andrew C. Fortier and Madeleine G. Evans</i>	5
3 History of Site Investigations, Andrew C. Fortier	9
FAI-270 (255) Corridor Survey (1976)	9
Proposed Interchange and Industrial Park Survey (1980–1981).....	10
Proposed Frontage Road and Initial Test Investigations and Mitigation (1981).....	10
Proposed Frontage Road Final Mitigation (1982)	10
Columbia Crossing Project: SCI Engineering, Inc. (2006)	12
University of Illinois/ITARP Investigations (2007–2008)	12
4 Features, Andrew C. Fortier	15
North Ridge Structures.....	15
Keyhole Structures	17
Rectilinear Post Structures	24
South Ridge Structures	27
Keyhole Structures	28
Rectilinear Post Structures	37
Pits	46
North Ridge Pits	48
South Ridge Pits	58
Isolated Nonstructural Posts.....	63
Household and Community Yards	63
North Ridge Community Yards	64
South Ridge Household Yards	64
The North Ridge Community Configuration	70
The South Ridge Community Configuration	72
5 Ceramics, Alexey Zelin	79
Methods	79
Ceramic Assemblage.....	82
Vessels.....	82
Temper and Paste.....	83
Exterior Surface Treatment	83
Lip Attributes	85
Jars	88
Bowls	91
Jar/Bowls	97
Indeterminate Vessels	97
Pinch Pots	97
Ceramic Disks	98
Clay Discoidals.....	98

Book Notes

Late Woodland Communities in the American Bottom: The Fish Lake Site

Pipes	99
Modeled Clay Objects	99
Effigy Figurines	100
North Ridge	100
Burned Clay	101
Modeled Clay Objects	101
Clay Figurines	103
Ceramic Disks	105
Clay Discoidals	106
Pipes	107
Body Sherds	109
Bloated Sherds	111
Vessels	112
Effigy Appendages	127
Vessel Deposition in the Features	128
Vessel Distribution	130
South Ridge	132
Burned Clay	133
Modeled Clay Objects	135
Effigy Figurines	137
Ceramic Disks	141
Clay Discoidals	141
Pipes	144
Body Sherds	145
Bloated Ceramics	146
Vessels	148
Bowls	157
Jar/Bowls	163
Pinch Pots	163
Effigy Appendages	165
Vessel Deposition in the Features	166
Vessel Distribution	168
Interridge Comparisons	169
Intersite Comparisons	173
Interpretation of the Effigy Figurines and Effigy Appendages	175
Miscellaneous Components	177
Early Woodland Carr Creek Phase Ceramic Assemblage	177
Middle Woodland, Havana Cordmarked	177
Terminal Late Woodland and Mississippian Ceramics	177
Indeterminate Component	178
Conclusion	178
6 Lithic Remains, Amanda J. Butler, Brenda E. Beck, and Madeleine G. Evans	181
Introduction	181
Methods	182
Lithic Resources	183
Assemblage Description	187
Chert Effigy	187
Hafted Bifaces	188
Woodworking Tools	193

Book Notes

Contents

Unhafted Bifaces	195
Formal Unifaces	198
Informal Tools	198
Cores	200
Debitage	202
Disks and Discoidals	203
Celts	206
Full-Grooved Axe	208
Igneous Flakes and Other Groundstone Manufacturing By-Products	208
Limestone Tools	209
Cobble Tools	210
Hammerstones	210
Pitted Cobbles	212
Manos	212
Multiuse Tools	212
Cobble Tools Summary	212
Abraders	213
FCR/Rough Rock	215
Minerals	216
Conclusions	217
Chert Procurement and Use	217
Intrasite Comparisons	219
Intersite Comparison	221
Nonutilitarian and Symbolic Items	223
Density	223
Summary	224
7 Archaeobotany, Kathryn E. Parker	227
Methods of Botanical Analysis	228
Flotation Samples	228
Hand-Collected Samples and In Situ Piece Plots	229
Results of Analysis	229
Botanical Remains from Flotation	229
Hand-Collected Plant Materials and In Situ Piece Plots	244
Discussion and Summary	244
8 Faunal Analysis, Steven R. Kuehn	249
Method of Analysis	249
North Ridge Assemblage	250
South Ridge Assemblage	263
Discussion	273
9 Radiocarbon Dates, Andrew C. Fortier	275
Radiocarbon Determinations from the South Ridge	276
Radiocarbon Determinations from the North Ridge	277
Discussion	278
10 Interpretation and Discussion, Andrew C. Fortier, Alexey Zelin, Madeleine G. Evans, Kathryn E. Parker, and Steven R. Kuehn	279
Introduction	279
Community Duration and Function, Andrew C. Fortier	279

Late Woodland Communities in the American Bottom: The Fish Lake Site

Patterns of Settlement and Community Configuration, <i>Andrew C. Fortier</i>	282
Settlement Typology	282
Community Configurations.....	283
Material Resource Procurement Patterns	284
Ceramic Contexts, Style, and Technology, <i>Alexey Zelin</i>	284
Lithic Procurement Patterns and Technology, <i>Madeleine G. Evans</i>	286
Subsistence Procurement.....	289
Plant Resource Procurement at the Fish Lake Site, <i>Kathryn E. Parker</i>	289
Faunal Exploitation, <i>Steven R. Kuehn</i>	291
Patrick Phase Faunal Subsistence Strategies in the American Bottom	297
Ritual, Gaming, and Symbolic Behavior, <i>Andrew C. Fortier</i>	299

11 Summary and Site Significance, <i>Andrew C. Fortier</i>	303
---	-----

Appendices

To facilitate the production process, long appendices tables are available *online* in their original Excel or PDF format and are not included in the paper copy of this report. Copy the URLs below and paste them into a web browser to download the data. Excel and Acrobat Reader or similar programs that can open .xlsx and .pdf files are required.

A Features	307
Appendix A.1. Site map of all Patrick phase features http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_A.1.pdf	
Appendix A.2. Attributes of basin-shaped pits from the North Ridge http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_A.2.xlsx	
Appendix A.3. Attributes of bell-shaped pits from the North Ridge http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_A.3.xlsx	
Appendix A.4. Attributes of cylinder-shaped pits from the North Ridge http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_A.4.xlsx	
Appendix A.5. Attributes of truncated cones from the North Ridge http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_A.5.xlsx	
Appendix A.6. Attributes of irregular pits from the North Ridge http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_A.6.xlsx	
Appendix A.7. Attributes of pit features from the North Ridge (EB20 and EB29) http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_A.7.xlsx	
Appendix A.8. Earth ovens from the North Ridge http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_A.8.xlsx	
Appendix A.9. Attributes of basin-shaped pits from the South Ridge http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_A.9.xlsx	
Appendix A.10. Attributes of bell-shaped pits from the South Ridge http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_A.10.xlsx	
Appendix A.11. Attributes of cylinder-shaped pits from the South Ridge http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_A.11.xlsx	
Appendix A.12. Attributes of irregular-shaped pits from the South Ridge http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_A.12.xlsx	
Appendix A.13. Attributes of truncated cones from the South Ridge http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_A.13.xlsx	
Appendix A.14. Indeterminate profile shaped and compound pits from the South Ridge http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_A.14.xlsx	
Appendix A.15. Earth ovens from the South Ridge http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_A.15.xlsx	

Contents

B	Ceramic Vessel Inventory	308
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_B.xlsx	
C	Attributes and Source Locations of Chert Types and Other Flaked Material Recovered at the Fish Lake Site	308
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_C.xlsx	
D	Lithics	308–309
	Appendix D.1. Fish Lake pre-Late Woodland projectile points	
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_D.1.xlsx	
	Appendix D.2. Fish Lake Late Woodland dart/knife projectile points	
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_D.2.xlsx	
	Appendix D.3. Fish Lake Late Woodland arrow points	
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_D.3.xlsx	
	Appendix D.4. Fish Lake chipped woodworking tools	
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_D.4.xlsx	
	Appendix D.5. Fish Lake polished flakes	
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_D.5.xlsx	
	Appendix D.6. Fish Lake unhafted bifaces	
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_D.6.xlsx	
	Appendix D.7. Fish Lake formal unifaces	
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_D.7.xlsx	
	Appendix D.8. Fish Lake informal tools exhibiting alternate retouch	
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_D.8.xlsx	
	Appendix D.9. Summary of Fish Lake cores	
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_D.9.xlsx	
	Appendix D.10. Summary of Fish Lake debitage	
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_D.10.xlsx	
	Appendix D.11. Attributes of Fish Lake celt fragments	
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_D.11.xlsx	
	Appendix D.12. Fish Lake igneous flakes	
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_D.12.xlsx	
	Appendix D.13. Fish Lake limestone tools and shaped limestone	
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_D.13.xlsx	
	Appendix D.14. Fish Lake cobble tools	
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_D.14.xlsx	
	Appendix D.15. Fish Lake abraders	
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_D.15.xlsx	
	Appendix D.16. Fish Lake feature lithic material density	
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_D.16.xlsx	
E	Metric Attributes of Formal Lithic Tools from the Range Site	309
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_E.xlsx	
F	Archaeobotanical Data	309
	Appendix F.1a. Plant Remains from Flotation: Fish Lake site North Ridge (F276–332)	
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_F.1a.xlsx	
	Appendix F.1b. Plant Remains from Flotation: Fish Lake site North Ridge (F433–457, F847, and F855)	
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_F.1b.xlsx	
	Appendix F.1c. Plant Remains from Flotation: Fish Lake site North Ridge (F165–275)	
	http://sas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_F.1c.xlsx	

Late Woodland Communities in the American Bottom: The Fish Lake Site

Appendix F.1d.	Plant Remains from Flotation: Fish Lake site South Ridge (F501-632)	
	http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_F.1d.xlsx	
Appendix F.1e.	Plant Remains from Flotation: Fish Lake site South Ridge (F633-719)	
	http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_F.1e.xlsx	
Appendix F.1f.	Plant Remains from Flotation: Fish Lake site South Ridge (F286-500)	
	http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_F.1f.xlsx	
Appendix F.1g.	Plant Remains from Flotation: Fish Lake site South Ridge (F720-867)	
	http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_F.1g.xlsx	
Appendix F.2a.	Part 1. Hand-collected botanical specimens	
	http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_F.2a.xlsx	
Appendix F.2b.	Part 2. Hand-collected botanical specimens	
	http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_F.2b.xlsx	
G	Faunal Inventory	310
	http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_G.xlsx	
H	Feature Materials from the North Ridge Occupation	310
	http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_H.pdf	
I	Feature Materials from the South Ridge Occupation	310
	http://tsas.illinois.edu/publications/data/TARR/28/11MO608_Fish_Lake_Appendix_I.pdf	
References		311

Figures

1.1.	Fish Lake site and Illinois	2
1.2.	Fish Lake site and locality	2
1.3.	Columbia Interchange and Fish Lake Industrial Park	3
2.1.	Local physiography within and adjacent to the Fish Lake site	6
2.2.	North and South Ridges at Fish Lake.....	7
2.3.	Lithic sources in the local landscape.....	8
3.1.	Surface extent of site	10
3.2.	1981–1982 feature distribution and excavation blocks.....	11
3.3.	2007 feature distribution and excavation blocks.....	11
3.4.	Composite views of 2007 excavations.....	14
4.1.	Site plan of all Patrick features from 1982 and 2007 seasons.....	16
4.2.	Plan and profile of keyhole structure, Feature 256.....	19
4.3.	Plan and profile of keyhole structure, Feature 257.....	19
4.4.	Plan and profile of keyhole structure, Feature 282.....	20
4.5.	Plan and profile of keyhole structure, Feature 283.....	21
4.6.	Plan and profile of rectilinear structure, Feature 323, and keyhole structure, Feature 324.....	22
4.7.	Plan and profile of keyhole structure, Feature 165.....	23
4.8.	Plan and profile of rectilinear structure, Feature 249.....	25
4.9.	Plan and profile of rectilinear structure, Feature 271.....	25
4.10.	Plan view of large rectilinear post structure, Feature 330, and screen, Feature 868	26
4.11.	Plan and profile of keyhole structure, Feature 500.....	30
4.12.	Plan and profile of keyhole structure, Feature 622.....	30
4.13.	Plan and profile of keyhole structures, Features 631 and 632.....	31
4.14.	Plan and profile of keyhole structure, Feature 667.....	32
4.15.	Plan and profile of keyhole structure, Feature 687.....	33
4.16.	Plan and profile of keyhole structures, Features 708 and 709.....	34
4.17.	Plan and profile of keyhole structure, Feature 711.....	35
4.18.	Plan and profile of keyhole structure, Feature 779.....	36
4.19.	Plan and profile of keyhole structure, Feature 843.....	37
4.20.	Plan and profile of rectilinear structure, Feature 357.....	40
4.21.	Plan and profile of rectilinear structure, Feature 358.....	40
4.22.	Plan and profile of rectilinear structure, Feature 386.....	40
4.23.	Plan and profile of rectilinear structure, Feature 491.....	40
4.24.	Plan and profile of rectilinear structure, Feature 506.....	41
4.25.	Plan and profile of rectilinear structure, Feature 510.....	42
4.26.	Plan and profile of rectilinear structure, Feature 555.....	42
4.27.	Plan and profile of rectilinear structure, Feature 564.....	42
4.28.	Plan and profile of rectilinear structure, Feature 594.....	43
4.29.	Plan and profile of rectilinear structure, Feature 643.....	43
4.30.	Plan and profile of rectilinear structure, Feature 706.....	44
4.31.	Keyhole structure orientations.....	47
4.32.	Long axis basin orientations for rectilinear structures, North and South Ridges.....	48
4.33.	Pit volume formulae.....	50
4.34.	Cylinder-shaped pits from the North Ridge	50
4.35.	Bell-shaped pits from the North Ridge	51
4.36.	Earth ovens from the North Ridge	53
4.37.	Earth ovens.....	54

Late Woodland Communities in the American Bottom: The Fish Lake Site

4.38.	Refuse pits	55
4.39.	Distribution of cylinder-shaped pits in the North Ridge.....	56
4.40.	Cluster of pits in the North Ridge with exotics	57
4.41.	Cylinder-shaped pits from the South Ridge with more than 10 fill zones	59
4.42.	Deep multizoned pits from the South Ridge	60
4.43.	Earth oven profiles from the South Ridge.....	61-62
4.44.	Paired earth ovens, Features 808 and 809, from the South Ridge	62
4.45.	Compound pit profiles from the South Ridge.....	63
4.46.	North Ridge community yard: southern group	65
4.47.	North Ridge community yard: northern group.....	66
4.48.	North Ridge community configuration.....	67
4.49.	South Ridge keyhole household yards.....	68
4.50.	Rectilinear household yard in the South Ridge.....	69
4.51.	South Ridge community configuration: dispersed	73
4.52.	South Ridge community configuration: centralized	74
4.53.	Central pits with more than 8,000 g of refuse	75
4.54.	Plan and profile of Feature 337, square orifice pit	76
5.1.	Vessel attributes.....	81
5.2.	Lip impression typology	86
5.3.	Lip impressions	87
5.4.	Vessel appendages.....	89
5.5.	Upper body jar shapes.....	90
5.6.	Jar sizes.....	91
5.7.	Jar bases.....	92
5.8.	Fish Lake bowls.....	93
5.9.	Vessel 245-1.....	95
5.10.	Vessel 183-1.....	96
5.11.	Pinch pots	98
5.12.	Selected features with ceramic density over 1 g/l.....	102
5.13.	Selected modeled clay objects from the North Ridge	103
5.14.	North Ridge effigy figurines	104
5.15.	North Ridge ceramic disks	106
5.16.	North Ridge clay discoids	107
5.17.	North Ridge pipes	108
5.18.	Pipe distribution across the North Ridge	110
5.19.	North Ridge decorated body sherds.....	111
5.20.	Bloated rim sherd	112
5.21.	Incurving jar rim profiles	114-115
5.22.	Incurving jar lip modification	117
5.23.	Insulated jar rim profiles	118
5.24.	Outcurving jar rim profiles	118
5.25.	Vessel 201-13.....	119
5.26.	Vessel 189-7.....	119
5.27.	Bowls with vertical rims.....	120
5.28.	Bowls with flared rims	120
5.29.	Bowls with inslanted rims.....	121
5.30.	Small bowls.....	121
5.31.	Bowls with modified lips	122
5.32.	Vessels from Feature 253	124-125
5.33.	North Ridge pinch pot profiles	126
5.34.	Decorated pinch pots.....	127
5.35.	North Ridge effigy appendages	128

Figures

5.36.	North Ridge selected vessels	129
5.37.	North Ridge features that produced vessels	131
5.38.	Selected features with ceramic density over 1 g/l	134
5.39.	South Ridge modeled clay objects	135
5.40.	Clay plug	137
5.41.	Possible anthropomorphic effigy fragments	138
5.42.	South Ridge bird effigies	139
5.43.	South Ridge effigies	140
5.44.	South Ridge ceramic disks	142
5.45.	South Ridge clay discoidals	143
5.46.	South Ridge pipes	145
5.47.	Decorated body sherds	146
5.48.	Bloated ceramic distribution within South Ridge features	147
5.49.	Incurving jar rim profiles	149-151
5.50.	Jars decorated with punctates	154
5.51.	Vessels with pinched lips	154
5.52.	Inslanted jar profiles	155
5.53.	Decorated inslanted jars	156
5.54.	Outcurving jar profiles	157
5.55.	South Ridge bowl profiles	159-160
5.56.	Shallow bowls	160
5.57.	Perforated bowls	161
5.58.	Decorated bowls	162
5.59.	Vessel 392-2	163
5.60.	Pinch pots from Feature 474	163
5.61.	Pinch pot profiles	164
5.62.	South Ridge effigy appendages	165
5.63.	Vessel 488-6	166
5.64.	Vessel 455-1	167
5.65.	Vessel 337-6	167
5.66.	Vessel 591-7	168
5.67.	Vessel 629-1	168
5.68.	Vessels 814-1 and 818-1	169
5.69.	South Ridge features that produced vessels	170
5.70.	Terminal Late Woodland and Mississippian ceramics	178
6.1.	Locations of hafted biface metric attributes	183
6.2.	Chert effigy	188
6.3.	Pre-Late Woodland points	189
6.4.	Late Woodland dart/knife points	190
6.5.	Late Woodland arrow points	191
6.6.	Drills and perforators	192
6.7.	Unfinished adze fragments	194
6.8.	Examples of a Fish Lake chisel and pick	195
6.9.	Large refined bifaces	197
6.10.	Selection of formal unifacial scrapers	198
6.11.	Unifacial drills, gravers, and spokeshaves	199
6.12.	Examples of formal unifaces with obliquely angled edges	199
6.13.	Examples of informal tools with retouch along alternating sides of the edge	201
6.14.	Distribution of features containing high amounts of debitage	204
6.15.	Discoidals	205
6.16.	Limestone and sandstone disks	206
6.17.	Celt bit fragments	207

Book Notes

Late Woodland Communities in the American Bottom: The Fish Lake Site

6.18.	Shaped limestone	209
6.19.	Limestone hoe/spade	210
6.20.	Hammerstones	211
6.21.	Abraders	214
8.1.	North Ridge dog burial.....	253
8.2.	Cut marks on femur from dog burial	253
8.3.	Bird bone splinter awls.....	261
8.4.	Decorated bone shuttle.....	261
8.5.	Modified deer frontal bone	262
8.6.	Fish gorger, antler billets and scored antler tool stock	262
8.7.	Worked turtle shell.....	270
8.8.	Modified mussel shell	271
8.9.	Awls, shuttles, and a wedge.....	271
8.10.	Modified antler and scored tool stock.....	272
8.11.	Modified bird bone.....	272

Tables

1.1.	Summary of Excavated Cultural Materials	3
4.1.	Attributes of Keyhole Structure Basins from the North Ridge	18
4.2.	Attributes of Keyhole Structure Ramps from the North Ridge	18
4.3.	Attributes of Keyhole Structure Wall Posts from the North Ridge	18
4.4.	Attributes of Small Rectilinear Structures from the North Ridge	24
4.5.	Attributes of Late Woodland Patrick Phase Large Rectilinear Structures in the American Bottom	27
4.6.	Attributes of Keyhole Structure Basins from the South Ridge	28
4.7.	Attributes of Keyhole Structure Ramps from the South Ridge	29
4.8.	Attributes of Keyhole Structure Wall Posts from the South Ridge	29
4.9.	Attributes of Small Rectilinear Structures from the South Ridge	39
4.10.	Summary of North and South Ridge Pit Attributes	49
4.11.	Isolated Post Mold Attributes from the South Ridge	63
5.1.	Jar Size	90
5.2.	Bowl Size	94
5.3.	Bowl Morphology	94
5.4.	North Ridge Effigies	104
5.5.	North Ridge Ceramic Disks	105
5.6.	North Ridge Discoidals	106
5.7.	North Ridge Pipes/Fragments	107
5.8.	North Ridge Bloated Sherds	111
5.9.	North Ridge Jar Lip Decorations	116
5.10.	North Ridge Vessel Distribution	132
5.11.	North Ridge 1981–1982 and 2007 Ceramic Assemblage Summary	133
5.12.	South Ridge Effigies	138
5.13.	South Ridge Ceramic Disks	142
5.14.	South Ridge Discoidals	143
5.15.	South Ridge Pipes	145
5.16.	South Ridge Jars Lip Decorations	153
5.17.	South Ridge Bowl Lip Decorations	161
5.18.	South Ridge Vessel Distribution	171
5.19.	Ceramic Densities	171
5.20.	Vessel Shape Interridge Comparisons	171
5.21.	Lip Decorations Interridge Comparisons	172
6.1.	Fish Lake Patrick Phase Lithic Assemblage Totals	187
6.2.	Late Woodland Projectile Point Metric Ranges and Means	190
6.3.	Chipped Woodworking Tools Metric Attributes Summary	193
6.4.	Formal Uniface Frequency at Area Sites	199
6.5.	Discoidal and Disk Attributes	205
6.6.	Celt Fragment Summary	207
6.7.	Celt Frequency at Area Sites	208
6.8.	Abrader Frequency at Area Sites	215
6.9.	Fire-Cracked Rock, Limestone, Sandstone, and Other Rough Rock	215
6.10.	Chert Procurement and Use	218
6.11.	Fish Lake North and South Ridge Artifact Frequency Comparison	220
6.12.	Intersite Assemblage Frequency Comparison	222
6.13.	Intersite Assemblage Density Comparison	222
7.1.	Summary of Fish Lake Archaeobotanical Flotation Statistics	230

Late Woodland Communities in the American Bottom: The Fish Lake Site

7.2.	Summary of Identified Wood from 2007 Flotation Sampling	232
7.3.	Summary of Identified Wood and Nutshell from North and South Ridge Areas	233
7.4.	Summary of Identified Nutshell from 2007 Flotation Sampling	234
7.5.	Summary of Identified Seeds from 2007 Flotation Sampling	236
7.6.	<i>Iva annua</i> , <i>Hellanthus annuus</i> , and <i>Cucurbita pepo</i> Morphometric Data	237
7.7.	Tobacco Seed Feature Distribution	239
7.8.	Keyhole Structure Feature 779 In Situ Piece Plots	245
7.9.	Comparison of Patrick Phase Botanical Remains	247
8.1.	North Ridge Faunal Remains	251–252
8.2.	North Ridge Dog Remains	252
8.3.	North Ridge Modified and Butchered Bone	257
8.4.	Worked Bone Inventory	258–260
8.5.	South Ridge Faunal Remains	264–265
8.6.	South Ridge Modified and Butchered Bone	269
8.7.	South Ridge Mud Dauber Nest Fragments by Features	272
9.1.	Radiocarbon Dates	276
10.1.	Patrick Phase Fauna by Major Taxon	291
10.2.	Identifiable Fauna by Major Taxon	292
10.3.	Major Vertebrate Fauna by General Habitat	292
10.4.	Deer Body Part Representation in the 2007 Assemblage	294
10.5.	Food Utility Index Values for White-Tailed Deer	295
10.6.	Fish Representation by Family	295
10.7.	Fish Representation by Primary Habitat	296
10.8.	Proportion of Vertebrate NISP by Faunal Category	298

Book Notes



Back: Limestone hoe/spade and Late Woodland arrow points.

Front: Bone awl, dog effigy, aquatic bird effigy, canid effigy, pinch pot, decorated bone shuttle, gabbro discoidal, and limestone disk with engraved sunburst pattern.

All photography by Linda Alexander.

