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Catalog of Quaternary Palynologic and Vertebrate Localities in Iowa

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Iowa Quaternary palynologic and vertebrate localities collected since 1950 have been compiled, based primarily on published research. Information for each locality includes age, fossil material recovered, method of recovery, and literature reference. Listed in order of decreasing age, the 37 localities range from Yarmouthian to the early 1900's.

INDEX DESCRIPTORS: Iowa Palynology; Vertebrate Paleontology; Quaternary Chronostratigraphy.

A compilation of Quaternary fossil sites in Iowa has not been assembled since a major change in paleontological collecting methods occurred in the 1950's. Prior to that time, collectors of Quaternary fossils were mainly concerned with locating megavertebrates (an informal term for vertebrates of badger-size or larger). Modern paleontological analysis requires examination of all recoverable members of an ancient community, especially microvertebrates, pollen, mollusks, and other small organisms. Consequently, vertebrate occurrences collected before 1950 in Iowa (Calvin, 1909, 1911; Hay, 1914, 1924; Anderson, 1974) do not contain sufficient data to apply modern analysis for paleoenvironmental reconstruction. I have compiled a list of post-1950 collections of pollen and vertebrates in Iowa. This annotated list is intended to show areas where modern research has been completed and areas which remain to be examined. One facet of future research should be the re-examination of the "old" localities to recover the microbiota which lived in association with the extinct megafauna of mastodons, mammoths, sloths, and other large vertebrates.

PROCEDURE

This list is the result of a literature search, but includes research in progress in the Geology Department, University of Iowa, and Iowa Geological Survey. Archaeological localities are listed only if the associated biota has been studied in detail. A complete list of Iowa radiocarbon dates on fossil material is not attempted here. Such information can be obtained from Ruhe (1969) and the Iowa Geological Survey, which maintains a current file of radiocarbon dates.

Readers aware of additional unpublished Iowa Quaternary studies or specimens are encouraged to bring them to my attention.

Localities are listed in order of decreasing age, by name, age, fossil material recovered, method of recovery, most recent or most comprehensive literature reference, and location. The number before each entry corresponds to the location map (Figure 1).

names in quotes #3 "Aftonian Fauna" indicates replacement of original age assignment for that fauna; all other names in quotes are informal terms — formal names will be assigned as research is completed

site pollen locality

Site archaeological locality

[surface] collected from outcrop — little or no excavation

[surface ex.] excavated from surface exposure, quarry, or stream bank

? (with date) indicates unverified, anomalous, or questioned date

~ (with date) indicates approximate age or age by noted criteria

Biota Constituents

B Bird

F Fish

H "Herp" — reptile and/or amphibian

I Invertebrate — insect, clam, snail, etc.

LM Large Mammal — badger-size or larger

P Pollen and spores

PM Plant Macrofossil — seed, fruit, cone, leaf, needle, etc.

SM Small Mammal — smaller than badger-size

Radiocarbon Laboratories

CWR Case Western Reserve University

DIC Dicar Radioisotopes Laboratory

I Teledyne Isotopes (Isotopes, Inc.)

M University of Michigan

UCLA University of California, Los Angeles

WIS Radiocarbon Laboratory, University of Wisconsin, Madison

IOWA QUATERNARY PALYNOLOGIC AND VERTEBRATE LOCALITIES

Locality Descriptors

[cave] recovered from a cave in Paleozoic bedrock

coll. collector

[core] recovered with a soil, peat, or lake-mud core sampler

[dredge] from commercial operation for gravel in a river or lake

in prep. current research — information provided by researcher listed

l.b. local biota (fossil animals and plants from one locality)

l.f. local fauna (fossil animal remains from one locality)

loc. locality

1. Yarmouth Type Locality site (Yarmouthian) PM, P. [core] Hallberg, G. R. and R. G. Baker, 1977, Is the type section at Yarmouth (Iowa, U.S.A.) interglacial? [abs.]; X INQUA Congress Abstracts, Birmingham, England, p. 192, and Baker, R. G. and G. R. Hallberg, in prep.
loc: N. line, sec. 20, T.72 N., R.4 W., Des Moines Co., Iowa.
2. Turin l. f. (?Irvingtonian [pre-Sangamonian]) LM, SM. [surface ex.] Frankforter, W. D., 1971, The Turin local fauna, evidence for the medial Pleistocene age of the original "Aftonian" vertebrate fauna in western Iowa; Proc. Nebraska Acad. Sci., 81st Ann. Mtgs., pp. 48-49.
loc: Harrison and Monona Counties, Iowa.
3. "Aftonian Fauna" (?Sangamonian) LM. [surface, dredge] Dechert, H. S., 1968, Paleoeecology and correlation of the "Aftonian" fauna from Harrison and Monona Counties, Iowa; Unpub. M.S. thesis, Univ. of Iowa, Iowa City, 85 p. (including Turin 1. f. — age by biostratigraphy).

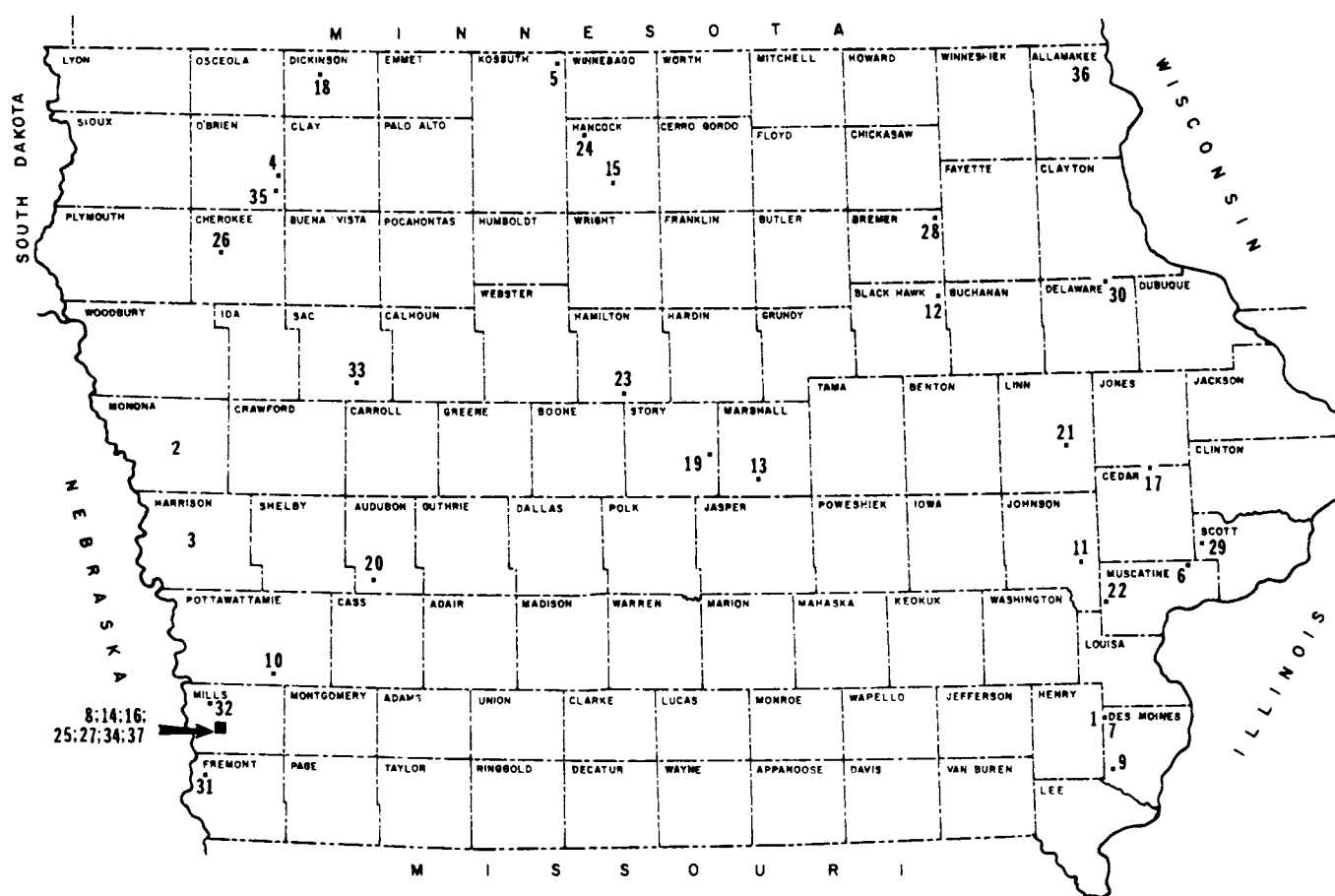


Figure 1. Quaternary palynologic and vertebrate localities in Iowa. Numbers correspond to catalog.

- loc: Harrison and Monona Counties, Iowa.
4. Waterman Creek site ($>40,000$ [I-8843]) PM, P. [surface ex.] Hallberg, G. R.; coll.
loc: SE $\frac{1}{4}$, NW $\frac{1}{4}$, sec. 26, T.95 N., R.39 W., O'Brien Co., Iowa.
 5. Hebron Bog ($?30,300 + 1,500$ [I-1859] to $3,340 \pm 110$ [I-1856]).
-1,300
P. [core] Durkee, L. H. (anal.); in Ruhe, R. V., 1969, *Quaternary Landscapes in Iowa*; Ames, Iowa State Univ. Press, p. 193
— Figure 5.8 (lower date anomalous according to lithostratigraphy).
loc: SW $\frac{1}{4}$, NW $\frac{1}{4}$, sec. 27, T.100 N., R.27 W., Kossuth Co., Iowa.
 6. Butler Farm site ($28,800 \pm 960$ [I-7698] to $22,750 \pm 520$ [I-7296])
P. [core] Van Zant, K. L., G. R. Hallberg, R. G. Baker, and G. A. Miller, 1975, Pollen analysis of a Farmdale interstadial peat from eastern Iowa; [abs.], Iowa Acad. Sci., 87th Session, Ames, and Van Zant, K. L. and G. R. Hallberg; in prep.
loc: SE $\frac{1}{4}$, SE $\frac{1}{4}$, sec. 14, T.78 N., R.1 W., Muscatine Co., Iowa.
 7. "Farmdale" site ($28,720 \pm 890$ [I-9358] to $24,900 \pm 570$ [I-9357])
P. [core] Baker, R. G. and G. R. Hallberg; in prep.
loc: N. line of sec. 20, T.72 N., R.4 W., Des Moines Co., Iowa.
 8. Craigmile Farm l. f. (?pre-Woodfordian) LM, SM, B, H, F. [surface ex.] Rhodes, R. S., II and H. A. Semken, Jr., 1976, Paleontological investigations within the Waubonsie Creek Watershed, Iowa; Report of the Department of Geology, University of Iowa, to the National Park Service, Denver, Colorado, 48 p. and Rhodes, R. S., II; Ph.D. dissertation in prep., Univ. of Iowa, Iowa City. (age by biostratigraphy)
loc: W. bank of Chaboneau Creek, SE $\frac{1}{4}$, NW $\frac{1}{4}$, NE $\frac{1}{4}$, sec. 13, T.17 N., R.43 W., Mills Co., Iowa.
 9. Beck Farm site (?Farmdale) P. [core] Baker, R. G., J. A. McGinnis, and G. R. Hallberg; in prep. (age by lithostratigraphy and pollen assemblage)
loc: SW corner, SE $\frac{1}{4}$, sec. 22, T.70 N., R.4 W., Des Moines Co., Iowa.
 10. Oakland l. f. ($\sim 22,400$) LM, SM. [surface ex.] Davis, L. C., R. E. Eshelman, and J. C. Prior, 1972, A primary mammoth site with associated fauna in Pottawattamie County, Iowa; Proc. Iowa Acad. Sci., 79(2):62-65. (age by stratigraphic correlation)
loc: W. of West Nishnabotna River, NW $\frac{1}{4}$, NE $\frac{1}{4}$, SW $\frac{1}{4}$, sec. 10, T.75 N., R.40 W., Pottawattamie Co., Iowa.
 11. Lake Calvin Terrace site #1 (? to $21,960 \pm 480$ [I-9475]) P. [core] Baker, R. G. and G. R. Hallberg; in prep. (date near top of core, base not yet dated)
loc: E. of Iowa River, N. C., sec. 25, T.79 N., R.6 W., Johnson Co., Iowa.
 12. Wapsipicon Terrace site (? to $20,850 \pm 450$ [I-9766]) P. [surface ex.] Baker, R. G. and S. Mundt; in prep. (date near top of core, base not yet dated)
loc: SE $\frac{1}{4}$, NW $\frac{1}{4}$, sec. 36, T.90 N., R.11 W., Blackhawk Co., Iowa.
 13. 3V-15 site ($18,230 + 1730$ [DIC-410] to $17,650 + 740$ [DIC-409])
-2190
-820
P. [core] Hanson, B. V., 1976, the stratigraphy, provenance, age, and depositional environment of east central Iowa loesses; Unpub. Ph.D. dissertation, Univ. of Iowa, Iowa City, 187 p.

- loc: SW $\frac{1}{4}$, SE $\frac{1}{4}$, sec. 2, T.82 N., R.19 W., Marshall Co., Iowa.
14. Wilson Farm 1. b. (18,100 \pm 310 [I-7382] and 17,950 \pm 310 [I-7383]) SM, I, PM, P. [surface ex.] Rhodes, R. S., II and H. A. Semken, Jr., 1976, Paleontological investigations within the Waubonsie Creek Watershed, Iowa; Report of the Department of Geology, University of Iowa, to the National Park Service, Denver, Colorado, 48 p. and Rhodes, R. S., II; Ph.D. dissertation in prep., Univ. of Iowa, Iowa City.
- loc: W. bank of Chaboneau Creek, SW $\frac{1}{4}$, NE $\frac{1}{4}$, SE $\frac{1}{4}$, SW $\frac{1}{4}$, sec. 13, T.17 N., R.43 W., Mills Co., Iowa.
15. McCulloch Bog (14,500 \pm 340 [I-1414] to 3,170 \pm 190 [I-1412]) P. [core] Brush, G. S., 1967, Pollen analysis of late-glacial and postglacial sediments in Iowa, in Cushing, E. J. and H. E. Wright, Jr., eds., *Quaternary Paleoecology*, New Haven, Yale Univ. Press, pp. 99-115.
- loc: SE $\frac{1}{4}$, sec. 32, T.94 N., R.24 W., Hancock Co., Iowa.
16. Waubonsie 1. b. (14,430 \pm 1,030 [I-7496]) SM, H, I, PM. [surface ex.] Rhodes, R. S., II and H. A. Semken, Jr., 1976, Paleontological investigations within the Waubonsie Creek Watershed, Iowa; Report of the Department of Geology, University of Iowa, to the National Park Service, Denver, Colorado, 48 p. and Rhodes, R. S., II; Ph.D. dissertation in prep., Univ. of Iowa, Iowa City.
- loc: W. bank of Chaboneau Creek, SE $\frac{1}{4}$, NW $\frac{1}{4}$, NW $\frac{1}{4}$, NE $\frac{1}{4}$, sec. 13, T.17 N., R.43 W., Mills Co., Iowa.
17. Pioneer Creek Peat [PC-38] (14,050 \pm 180 [I-7470] to 10,810 \pm 540 [CWR-150]) P. [core] Szabo, J. P., 1975, - 580
- The Quaternary history of the lower part of Pioneer Creek basin, Cedar and Jones Counties, Iowa; Unpub. Ph.D. dissertation, Univ. of Iowa, Iowa City, 173 p.
- loc: N. bank Pioneer Creek, NE $\frac{1}{4}$, NE $\frac{1}{4}$, SW $\frac{1}{4}$, sec. 5, T.82 N., R.3 W., Cedar Co., Iowa.
18. Lake West Okoboji (13,990 \pm 135 [WIS-835] to present) PM, P. [core] Van Zant, K. L., 1976, Late- and postglacial vegetational history of northern Iowa; Unpub. Ph.D. dissertation, Univ. of Iowa, Iowa City, 123 p.
- loc: Little Millers Bay, SW $\frac{1}{4}$, SW $\frac{1}{4}$, NE $\frac{1}{4}$, sec. 23, T.99 N., R. 37 W., Dickinson Co., Iowa.
19. Colo Bog (13,775 \pm 300 [I-1015] to 3,100 \pm 130 [I-1013]) P. [core] Brush, G. S., 1967, Pollen analysis of late-glacial and post-glacial sediments in Iowa, in Cushing, E. J. and H. E. Wright, Jr., eds., *Quaternary Paleoecology*; New Haven, Yale Univ. Press, pp. 99-115.
- loc: SW $\frac{1}{4}$, NW $\frac{1}{4}$, sec. 11, T.83 N., R.21 W., Story Co., Iowa.
20. Brayton 1. b. (12,420 \pm 180 [I-8015]) LM, SM, B, H, I, PM, P. [surface ex.] Dulian, J. J., 1975, Paleoecology of the Brayton local biota, Late Wisconsinan of southwestern Iowa; Unpub. M.S. thesis, Univ. of Iowa, Iowa City, 50 p.
- loc: E. of East Nishnabotna River, SW $\frac{1}{4}$, sec. 25, T.78 N., R.36 W., Audubon Co., Iowa.
21. Hughes Peat Bed (mollusks: 11,880 \pm 250 [I-5102]; *Picea* stump: 11,000 \pm 200 [ISGS-41]; peat: 9,340 \pm 200 [ISGS-55]; bison: 4,940 \pm 200 [ISGS-38]) LM, I, PM, P. [surface ex., core] Hall, S. A., 1971, Paleocological interpretation of bison, mollusks, and pollen from the Hughes Peat Bed, Linn County, Iowa; Unpub. M.S. thesis, Univ. of Iowa, Iowa City, 75 p.
- loc: W. of Martin Creek, SW $\frac{1}{4}$, SW $\frac{1}{4}$, SW $\frac{1}{4}$, sec. 2 and NW $\frac{1}{4}$, NW $\frac{1}{4}$, NW $\frac{1}{4}$, sec. 11, T.83 N., R.6 W., Linn Co., Iowa.
22. Lake Calvin Terrace site #2 (11,800 \pm 200 [I-3654]) P. [core] Baker, R. G. and G. R. Hallberg; in prep.
- loc: W. of Cedar River, N. C. sec. 16, T.77 N., R.4 W., Muscatine Co., Iowa.
23. Jewell Bog (11,635 \pm 400 [I-1019] to 2,365 \pm 500 [I-1016]; 10,640 \pm 270 [I-1418] to 9,570 \pm 180 [I-1417]) P. [core] Brush, G. S., 1967, Pollen analysis of late-glacial and post-glacial sediments in Iowa, in Cushing, E. J. and H. E. Wright, Jr., eds., *Quaternary Paleoecology*; New Haven, Yale Univ. Press, pp. 99-115. (dates from two cores listed)
- loc: NW $\frac{1}{4}$, sec. 19, T.86 N., R.24 W., Hamilton Co., Iowa.
24. Woden Bog (11,570 \pm 330 [I-1416] to 2,830 \pm 115 [I-1852]) P. [core] Durkee, L. H., 1971, A pollen profile from Woden Bog in north central Iowa; Ecology, 52(5):835-844.
- loc: NE corner, sec. 13, T.97 N., R.26 W., Hancock Co., Iowa.
25. Giangreco 1. f. (~1,000) LM, SM, H, I. [surface ex.] Rhodes, R. S., II and H. A. Semken, Jr., 1976, Paleontological investigations within the Waubonsie Creek Watershed, Iowa; Report of the Department of Geology, University of Iowa, to the National Park Service, Denver, Colorado, 48 p. and Rhodes, R. S., II; Ph.D. dissertation in prep., Univ. of Iowa, Iowa City. (age by biostratigraphy)
- loc: E. bank unnamed tributary, W. of Chaboneau Creek, SE $\frac{1}{4}$, NW $\frac{1}{4}$, SW $\frac{1}{4}$, SE $\frac{1}{4}$, sec. 14, T.17 N., R.43 W., Mills Co., Iowa.
26. Cherokee Sewer Site (level V: 10,030 \pm 460 [I-7783]; I: 4,615 \pm 230 [I-7990]) LM, SM, H, F, I. [surface ex.] Semken, H. A., Jr., 1974, 7. Microvertebrates from the Cherokee Sewer Site, in Henning, D. R., ed., The Cherokee Sewer Site (13CK405): A preliminary report of a stratified Paleo-Indian/Archaic site in northwestern Iowa; Jour. Iowa Archaeol. Soc., 21: 117-129. (oldest and youngest of 17 dates)
- loc: W. of Little Sioux River, W $\frac{1}{2}$, SW $\frac{1}{4}$, SE $\frac{1}{4}$, sec. 4, T.91 N., R.40 W., Cherokee Co., Iowa.
27. Garrett Farm 1. b. (~10,000) LM, SM, H, F, I, PM. [surface ex.] Fay, L.P.; M.S. thesis in prep., Univ. of Iowa, Iowa City.
- loc: S. bank Waubonsie Creek, NW $\frac{1}{4}$, NE $\frac{1}{4}$, NW $\frac{1}{4}$, SW $\frac{1}{4}$, sec. 8, T.71 N., R.42 W., Mills Co., Iowa. (age by lithostratigraphic correlation)
28. Sumner Bog (9,270 \pm 90 [WIS-811]; 5,520 \pm 70 [WIS-814]) P. [core] Van Zant, K. L. and G. R. Hallberg, 1976, A late-glacial pollen sequence from northeastern Iowa: Sumner Bog revisited; Iowa Geol. Survey, Tech. Inf. Series, #3, 17 p. and Van Zant, K. L., 1976, Late- and postglacial vegetational history of northern Iowa; Unpub. Ph.D. dissertation, Univ. of Iowa, Iowa City, 123 p. (stratigraphic hiatus between dates)
- loc: NW $\frac{1}{4}$, sec. 13, T.93 N., R.11 W., Bremer Co., Iowa.
29. Mud Creek 1. b. (6,310 \pm 75 [WIS-580]; 6,220 \pm 110 [I-6228]) LM, SM, H, F, I, PM, P. [surface ex.] Kramer, T. L., 1972, The paleoecology of the postglacial Mud Creek Biota, Cedar and Scott Counties, Iowa; Unpub. M.S. thesis, Univ. of Iowa, Iowa City, 69 p.
- loc: NW $\frac{1}{4}$, NW $\frac{1}{4}$, sec. 7, T.79 N., R.1 E., Scott Co., Iowa.
30. Willard Cave 1. b. (3,500 \pm 60 [WIS-483]; 1,605 \pm 65 [WIS-572]; 1,255 \pm 55 [WIS-490]) LM, SM, B, H, I, PM. [cave] Eshelman, R. E., 1971, The paleoecology of Willard Cave, Delaware County, Iowa; Unpub. M.S. thesis, Univ. of Iowa, Iowa City, 72 p.
- loc: N. of Elk Creek, NE $\frac{1}{4}$, SW $\frac{1}{4}$, sec. 2, T.90 N., R.4 W., Delaware Co., Iowa.
31. Thurman 1. b. (970 \pm 150 [I-6392]) LM, SM, B, H, F, I, PM. [surface ex.] Jenkins, J. T., 1972, The Pleistocene geology and paleoecology of the Fremont County Quarry, Fremont County, Iowa; Unpub. M.S. thesis, Univ. of Iowa, Iowa City, 55 p.
- loc: in Fremont County Quarry, E. of Missouri River, NW $\frac{1}{4}$, NW $\frac{1}{4}$, sec. 23, T.70 N., R.43 W., Fremont Co., Iowa.
32. Johnson Farm Sites (13ML128: 855 \pm 55 [WIS-566]; 790 \pm 50 [WIS-656]. 13ML129: 825 \pm 60 [WIS-564]; 765 \pm 55 [WIS-562]) LM, SM. [surface ex.] Johnson, P. C., 1972, Mammalian

- remains associated with Nebraska Phase earth lodges in Mills County, Iowa; Unpub. M.S. thesis, Univ. of Iowa, Iowa City, 71 p. (oldest and youngest of three dates from each Site)
loc: 41° 2' 04'' N., 95° 45' 12'' W. (13ML128); 41° 1' 57'' N., 95° 45' 16'' W. (13 ML129), W. bank Keg Creek, Mills Co., Iowa.
33. Blackhawk Lake (780 ± 60 [WIS-228] to present) P. [core] Webb, T., III, 1973, Pre- and postsettlement pollen from a short core, Blackhawk Lake, west-central Iowa; Proc. Iowa Acad. Sci., 80(1):41-44.
loc: 42° 20' N., 95° 40' W., Sac. Co., Iowa.
34. Chaboneau I. b. (705 ± 85 [I-7381]) LM, SM, H, I, PM. [surface ex.] Rhodes, R. S., II and H. A. Semken, Jr., 1976, Paleontological investigations within the Waubonsie Creek Watershed, Iowa; Report of the Department of Geology, University of Iowa, to the National Park Service, Denver, Colorado, 48 p. and Rhodes, R. S., II; Ph.D. dissertation in prep., Univ. of Iowa, Iowa City.
loc: W. bank Chaboneau Creek, SW¼, NE¼, SE¼, SW¼, sec. 13, T.71 N., R.43 W., Mills Co., Iowa.
35. Wittrock Site (525 ± 150 [M-1065]) LM, SM, B, F. [surface ex.] Semken, H. A., Jr., 1971, 8. Small mammal remains from the Wittrock Mill Creek Culture Site, in McKusick, M., ed., Prehistoric Investigations; Report #3, Office of the State Archaeologist, Iowa City, Iowa, pp. 109-113.
loc: Waterman Creek, NW¼, NW¼ sec. 11, T.94 N., R.39 W., O'Brien Co., Iowa.
36. Lane Enclosure Site (~485 and ~250) LM, SM, B, H, F. [surface ex.] Jenkins, J. T. and H. A. Semken, Jr., 1972, Faunal analysis of the Lane Enclosure, Allamakee County, Iowa; Proc. Iowa Acad. Sci., 78(3-4):76-78. (dates reported as "circa 1465 A.D." and "around 1700 A.D.," p. 76)
loc: 13AM200; S. of Upper Iowa River, north-central Allamakee Co., Iowa.
37. Hammers I. f. (~60) LM, SM, H, F, I, PM. [surface ex.] Rhodes, R. S., II and H. A. Semken, Jr., 1976, Paleontological investigations within the Waubonsie Creek Watershed, Iowa; Report of the Department of Geology, University of Iowa, to the National Park Service, Denver, Colorado, 48 p. and Rhodes, R. S., II; Ph.D. dissertation in prep., Univ. of Iowa, Iowa City. (age by human artifacts)
loc: E. bank unnamed tributary W. of Waubonsie Creek, SW¼, NE¼, SE¼, sec. 24, T.71 N., R.43 W., Mills Co., Iowa.

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