



The Hodges Site (12MG564) and the Emergence of the Oliver Phase in the White River Valley, Indiana

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ABSTRACT

In 2019, Gray & Pape, Inc., conducted data-recovery efforts at the Hodges site (12MG564), a predominately late precontact Oliver phase (AD 1200–1450) site found in the White River valley of Indiana. Investigations of the site have fostered new ideas regarding the emergence of the Oliver phase. Previous models have suggested that the emergence of the Oliver phase was largely due to the migration of Fort Ancient groups into the region. Other models suggested that the region served as a frontier. The concepts of frontier interaction zones and fluid boundaries are presented here as the reasons for the emergence of the Oliver phase from in situ Late Woodland populations.

KEYWORDS

Oliver phase; Castor phase; Fort Ancient; Albee phase; migration; frontiers

In 2019, Gray & Pape, Inc., conducted data-recovery efforts at the Hodges site (12MG564) under contract with HNTB, Inc., on behalf of the Indiana Department of Transportation (INDOT; Figure 1). The work was conducted as part of archaeological investigations associated with Section 6 of the I-69 Corridor Project, funded by the Federal Highway Administration, under the auspices of INDOT. Although the Hodges site is multicomponent with Late Archaic, Early Woodland, Middle Woodland, and late precontact occupations, it is predominately a late precontact Oliver phase (AD 1200–1450) habitation site that includes a well-defined midden deposit and intact subsurface features representative of its inhabitants having engaged in hunting, farming, and gathering wild plant foods. Other artifacts support domestic activities associated with the manufacture and maintenance of chipped- and ground-stone tools, as well as ceramic vessels. Accelerated mass spectrometry (AMS) dates from charred nutshell and corn kernels indicate that the site was occupied between AD 1277 and AD 1424.

The late precontact period in central and south-central Indiana is represented by several cultural traditions characterized by sedentary, village-dwelling horticulturalists in the Ohio, Wabash, and White River valleys. In the White River valley, Oliver phase groups emerged. Here, I present an overview of our work at the Hodges site and the data collected that has provided new information on the emergence of the Oliver phase. Previous interpretations of the Oliver phase emergence suggest

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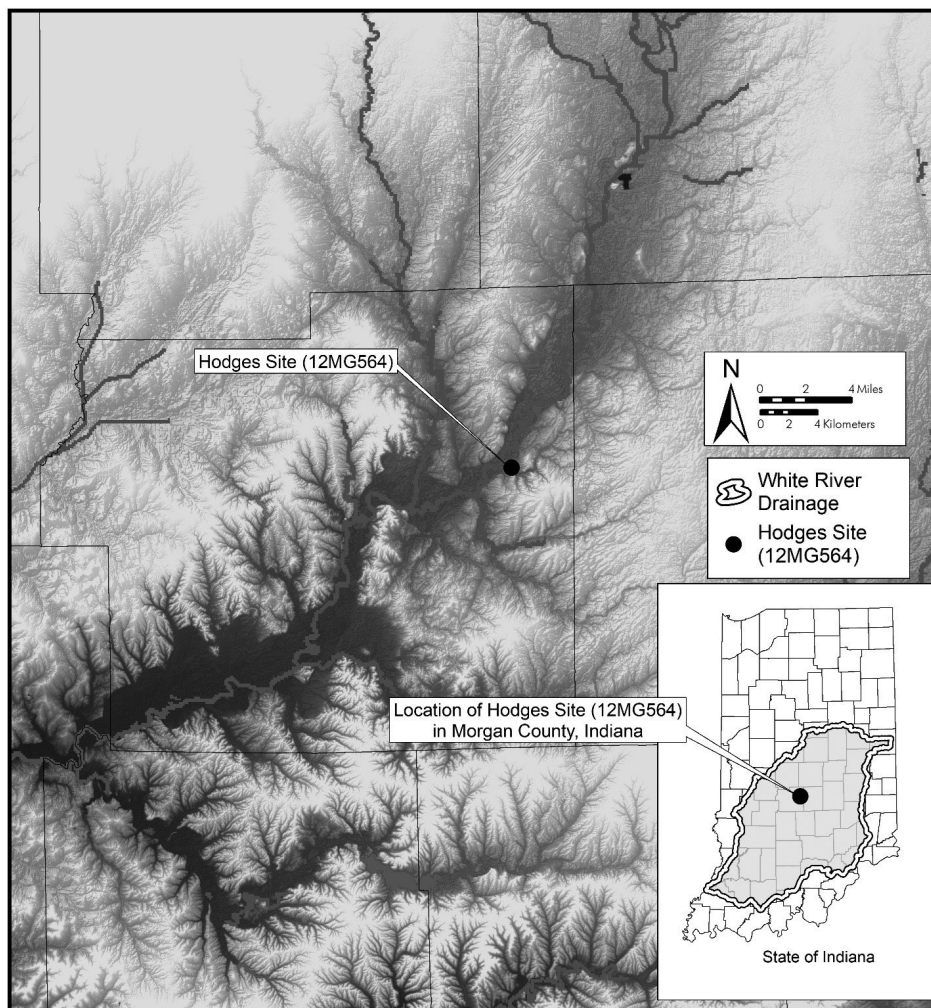


Figure 1. Location of the Hodges site (12MG564) in central Indiana.

it resulted from the in-migration of Fort Ancient groups from southwestern Ohio and southeastern Indiana (McCullough 2000, 2005; McCullough et al. 2004). Other work by Bush (2004), Dorwin (1971), and McCullough et alia (2004) has suggested that Oliver groups inhabited a frontier area. Expanding on this work, I elaborate that the region inhabited by Oliver groups existed at various times as a frontier social interaction zone and a crossroads, which encouraged the blending of disparate groups that merged to form the Oliver phase culture.

Environmental Setting

The Hodges site is located within the New Castle Till Plains and Drainageways division of the Central Till Plains in Morgan County, Indiana (see Figures 1 and 2). This is an area typified as having strong glacial modifications to the underlying



Figure 2. Drone image of the Hodges site and floodplain of the White River, view to the north-west. (Image courtesy of Gray & Pape, Inc., and Jason Kovacs.)

bedrock topography (Gray 2000). Specifically, the site is situated on a floodplain terrace within the White River valley, 100 m northeast of Crooked Creek, a tributary that flows west into the White River (see Figure 2; Trader et al. 2020:3). Pollen analysis suggests that, at the time of the Oliver occupation, the surrounding vegetation consisted of a composite forest composed of pine, oak, beech, hemlock, birch, elm, buckeye, ash, and cottonwood and associated understory species such as willow and dogwood. Pollen from riverine species such as cattail, horsetail, and sedge was also identified, suggesting proximity to marshes or backwater sloughs (Derr 2020:272–273). Mapped soils at the site consist of Genesee silt loam, a very deep, well-drained soil formed in loamy alluvium on floodplains (Sturm 1981).

Site Setting and Size

The Hodges site is positioned on the Crooked Creek terrace at an elevation of 192.6 m above mean sea level. The site lies in two agricultural fields bisected by Old State Route 37 North and a narrow strip of grass, ditch, and tree line that separates the agricultural fields from the roadway (Figure 3). The site covers a total area of 0.38 hectares (ha; Trader et al. 2020:96).

Field Investigations

Data recovery efforts were conducted in the fall of 2019 and consisted of a phased approach that included geophysical survey, shovel-test and test-unit

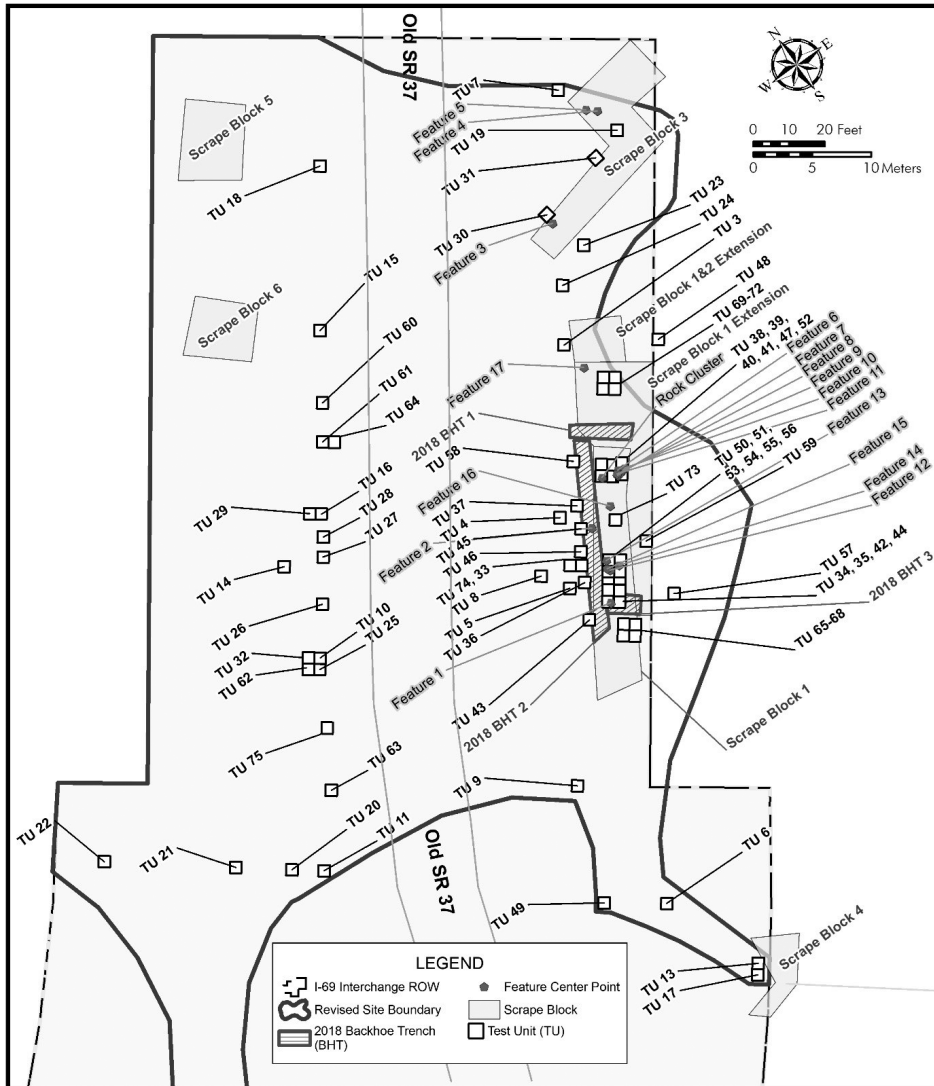


Figure 3. Phase III investigations showing locations of test unit excavations, strip blocks, backhoe trenches, and features (adapted from Trader et al. 2020:Figure 21).

excavations, mechanical removal of the plow zone, and excavation of cultural features and backhoe trenching (see Figure 3). In total, 72 test units were excavated covering an area of 71.3 m². An additional 403.88 m² of the site was investigated through plow-zone removal to expose cultural features (Trader et al. 2020:107–111). Nine cultural features were excavated that were assigned to the Oliver phase (Trader et al. 2020:311). Features included one smudge pit and seven refuse pits. Investigations yielded over seven thousand artifacts, including bifacial tools, cores, debitage, faunal remains, fire-cracked rock, ground/pecked/battered stone, pottery, projectile points, and retouched flakes (Trader et al. 2020:100).

Site Chronology

Nine charred nutshell, wood bark, and corn cupules were collected; these yielded AMS dates that contributed to our knowledge of the Oliver phase (Table 1; Figure 4). All radiocarbon dates presented in this article were recalibrated using the CALIB 8.2 program and IntCal 14 calibration curve (see Table 1; Stuiver et al. 1993). Hodges site dates ranged between 690 ± 20 BP and 550 ± 20 BP (cal 2σ AD 1277 and AD 1424; see Table 1; see Figure 4). These dates fall well within the temporal range identified for the Oliver phase in central Indiana. While these AMS dates cluster closely, three variants are noted that may represent more than one Oliver phase occupation (see Figure 4). Feature 11, a smudge pit, provided a date of 690 ± 20 BP (UGAMS-46909, cal 2σ AD 1277–1304 [$p = 0.779$]) and is one of the earlier Oliver phase dates from the site. AMS data from Features 1, 3, and 14 and TU 1 and TU 10 provide a close suite of dates that range from 600 ± 20 BP to 580 ± 20 BP or between cal AD 1307–1365 [$p = 0.788$] and cal AD 1317–1361 [$p = 0.705$]. When these five AMS dates are averaged, they provide a mean radiocarbon age of 592 ± 8 BP, or cal AD 1321–1358 [$p = 0.837$]. Similarly, Features 15, 16, and 17 illustrate a suite of three AMS dates that ranged from 560 ± 20 BP to 550 ± 20 BP, or between cal AD 1392–1421 [$p = 0.538$] and cal AD 1394–1424 [$p = 0.716$]. As above, these dates suggest a possible separate, short-lived occupation. While considerable overlap with the other AMS dates exists, they do suggest a possible later or terminus Oliver phase occupation at the site. When pooled together, all the late precontact dates yield a mean date of 591.1 ± 6 BP, or cal AD 1322–1357 ($p = 0.852$). When a T-test was conducted for all the dates together, they were found to be statistically different at a 95% level of confidence, suggesting that the dates do indicate different occupations.

Seventy-four ^{14}C dates from 21 Oliver phase archaeological sites were recalibrated for comparative purposes (Supplements 1 and 2). The AMS dates from the Hodges site are most like those from Lykin, McCullough's Run, Heaton Farm, Strawtown, Clampitt, and Cox's Woods. Together, these sites yielded a pooled mean of 640 ± 5 BP (cal AD 1299 to AD 1320 [$p = 0.399$] and cal AD 1376 to AD 1389 [$p = 0.319$] at 2σ). When a T-test was conducted of these 16 ^{14}C dates, they were found to be statistically the same at a 93% level of confidence, suggesting that the occupation at the Hodges site was contemporaneous with occupations at these other sites and all were likely occupied simultaneously.

Chipped-Stone Tools

Chipped-stone tools comprise 95.2% of the artifact assemblage. Nineteen different raw material types are represented. Thirty-eight percent are foreign chert types, such as Bryantville, Holland, Allen's Creek, Jeffersonville, Lead Creek, and Wyandotte. Locally available chert types include gravel chert, quartz/quartzite and Fall Creek cherts (Trader et al. 2020:195–196).

Table 1. Radiocarbon Assays from the Hodges Site.

Lab No.	Provenience	Soil Horizon/Cultural Zone	Material ^a	¹⁴ C Age BP	δ ¹³ C	Calendar Age—2σ
UGAMS-34340	TU 1	Ab	Black Walnut Shell	580 ± 20	-27.15	cal AD 1317–1361 (<i>p</i> = 0.705)
UGAMS-34341	Feature 1	Zone A	Corn Kernel	600 ± 20	-9.46	cal AD 1305–1365 (<i>p</i> = 0.788)
UGAMS-46906	TU 10	Ab	Hickory Nutshell	590 ± 20	-24.8	cal AD 1307–1363 (<i>p</i> = 0.768)
UGAMS-46907	Feature 3	Zone A	Corn Cupule	600 ± 20	-10.1	cal AD 1305–1365 (<i>p</i> = 0.788)
UGAMS-46909	Feature 11	Zone A	Unidentified Wood Bark	690 ± 20	-25.8	cal AD 1277–1304 (<i>p</i> = 0.779)
UGAMS-46911	Feature 14	Zone A	Corn Kernel	590 ± 20	-8.9	cal AD 1307–1363 (<i>p</i> = 0.768)
UGAMS-46912	Feature 15	Zone A	Corn Kernel	560 ± 20	-9.5	cal AD 1392–1421 (<i>p</i> = 0.538)
UGAMS-46913	Feature 16	Zone A	Corn Kernel	560 ± 20	-8.7	cal AD 1392–1421 (<i>p</i> = 0.538)
UGAMS-46914	Feature 17	Zone A	Corn Kernel	550 ± 20	-9.1	cal AD 1324–1355 (<i>p</i> = 0.461)
						cal AD 1394–1424 (<i>p</i> = 0.716)

^a Archaeobotanical ID by Leone (2020).

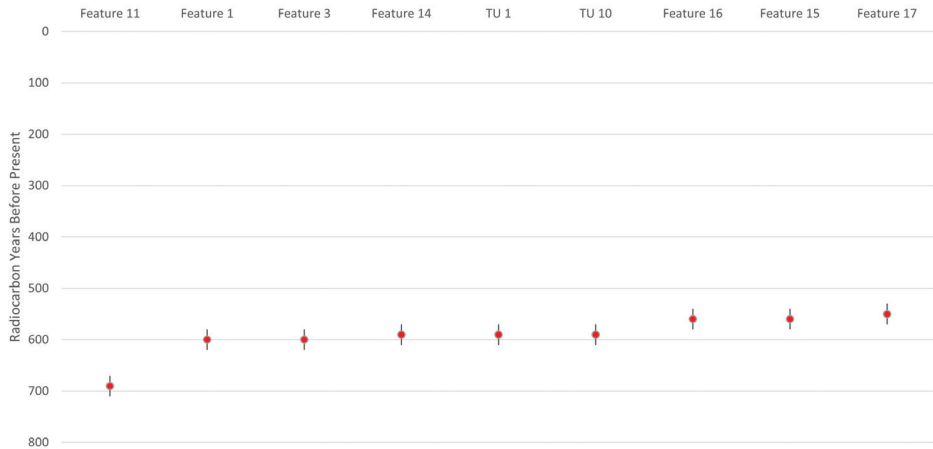


Figure 4. Oliver ^{14}C dates (adapted from Trader et al. 2020:Figure 170).

Sixteen late precontact projectile points and fragments were recovered during excavations (Figure 5). All were found from test unit contexts only. These points are defined as part of the Late Woodland/Mississippian Triangular Cluster, and all were identified as Madison point types (Trader et al. 2020:199–200). Madison points are diagnostic of the late precontact period and have been dated between AD 800 and the beginning of the historic period, around AD 1600 or AD 1700 (Justice 1987:224–227). Twenty-five percent of the points were manufactured from a local chert type, while 56% were manufactured from foreign cherts (Trader et al. 2020:200).



Figure 5. Late precontact Madison projectile points (from Trader et al. 2020:Figure 76; photo by Eric Edelbrock).

Ceramics

In total, 4,231 ceramic sherds, weighing 9,660 g, were recovered. This included 106 rims, 1,337 body sherds, 16 neck sherds, 4 shoulders, 3 appendages, and 2,765 fragments less than 4 cm². Fragments less than 4 cm² were not formally analyzed (Hahn and Trader 2020:233). All the ceramics were associated with the site's Oliver phase occupation, were ubiquitous across the site, and were recovered primarily from test unit ($N = 3,454$) and feature ($N = 633$) contexts. The remaining pottery fragments ($N = 144$) were recovered as piece plots or from trench or block excavations (Hahn and Trader 2020:234).

A total of 1,467 body, rim, shoulder, and neck sherds, as well as appendages, were formally analyzed (Hahn and Trader 2020:233). After refitting sherds, a total of 72 vessels were identified (Hahn and Trader 2020:255). One vessel type was identified as jars. Several very thin sherds that were less than 3 mm may be from miniature vessels; however, they were too fragmentary to make a formal determination (Hahn and Trader 2020:246).

Ninety-nine percent of the ceramics were grit tempered with crushed igneous rock. Other tempering agents used include grit and grog, grit and sand, and sand (Hahn and Trader 2020:239). Temper size ranged from 0.4 mm to 2 mm, with an average temper between 0.8 mm and 0.9 mm (Hahn and Trader 2020:239). As noted, grit temper was characteristic of the Oliver phase and is consistent with that found at other sites of this period, such as at Fort Ancient villages, Springwell occupations in Michigan, and Fisher sites in Illinois and Wisconsin (Carroll 2019; Emerson 2017; McCullough 2011). It was also the main tempering agent used by Albee phase groups in western and central Indiana (McCord and Cochran 1994:41).

Vessel walls ranged from 2.18 mm to 11.88 mm in thickness, with an average thickness of 5.76 mm. Necks ranged in thickness between 5.15 mm and 11 mm, with an average of 5.76 mm. Shoulders measured between 2.93 mm and 9.28 mm, with an average thickness of 5.76 mm. Appendages were relatively thick and ranged between 7.91 mm and 11 mm; however, only three specimens were recovered (Hahn and Trader 2020:246).

In total, 1,466 of the sherds exhibited exterior surface treatment. Of these, 63.6% were cordmarked, 21% were smoothed, and 2.6% exhibited plain surfaces (Figure 6; Hahn and Trader 2020:247). At the Bowen site, 86.8% of all pottery was cordmarked (Dorwin 1971:248). At Morrell-Sheets, an Albee phase site, 71.9% of sherds were cordmarked (McCord and Cochran 1994:43).

In total, 189 body sherds are decorated, of which, 65.6% exhibit incised lines, such as curvilinear guilloche and rectilinear guilloche (see Figure 6; Hahn and Trader 2020:250). Guilloche is a common decorative motif on Fort Ancient site ceramics (Drooker 1997:79). Other body sherds exhibited cord impressions (3.7%), drag and jab (1%), net decorations (26.4%), and punctations (2.6%) as decorative motifs (Hahn and Trader 2020:250). Sherds with cord impressions exhibited chevron

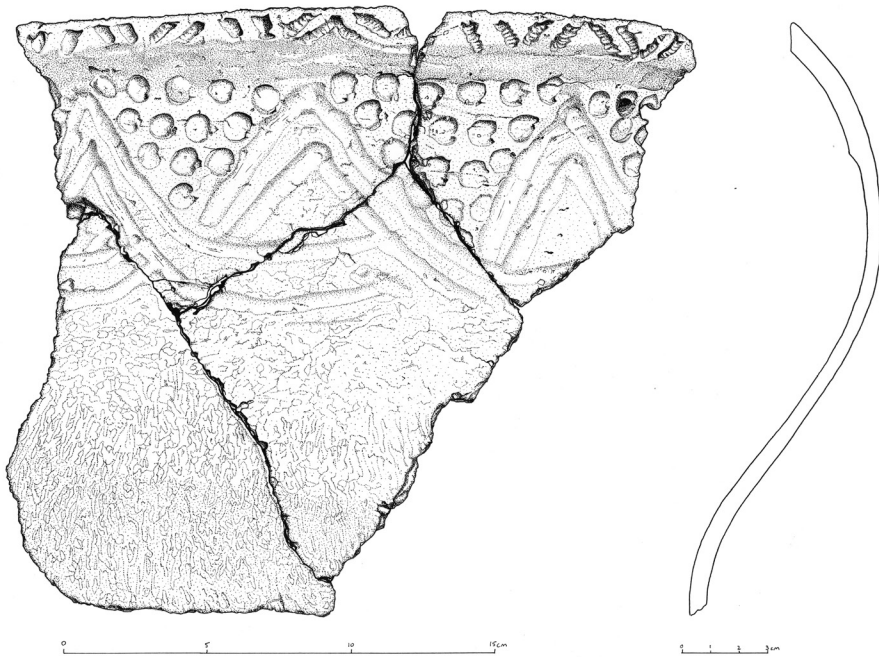


Figure 6. Vessel 3 with cordmarked surface and exhibiting guilloche incising, punctations, and cord-impressed lip (from Trader et al. 2020:Figure 94; photo by Eric Edelbrock; drawing by Aimee Smith).

or oblique patterns (see Figure 6; Hahn and Trader 2020:251). Cord-impressed decorations are common of Late Woodland wares from Western Basin Tradition sites as well as Albee phase sites (McCord and Cochran 1994:48; Redmond and McCullough 2000:663).

As noted, 106 rims were recovered from the site. Rims ranged in thickness from 2.12 mm to 10.51 mm, with an average thickness of 5.76 mm (Hahn and Trader 2020:239). Of the rims, 84% were flat, 2% were rolled, 7% were scalloped, and one exhibited castellations. Of the lips analyzed at the Bowen site, the majority were flattened (Dorwin 1971:Table 10:250). Similarly, 57.9% of lips at the Morrell-Sheets site were flattened (McCord and Cochran 1994:45). Thirty-nine percent of the rims were collared, while 10% were thickened (Figure 7). Seven percent were extruded, 3% had rim straps, and 4% were everted. Collared rims are also commonly found on Castor phase vessels (McCullough and White 2005:145). Ninety-three percent of the rims at the Morrell-Sheets site were collared (McCord and Cochran 1994:44). Vessels at the Hodges site ranged in diameter from 12 cm to 40 cm, with an average diameter of 23.8 mm. Vessels ranged from smaller medium to large. Smaller vessels were likely used for cooking, whereas larger vessels were used for storage (Hahn and Trader 2020:246). Forty-five of the rims exhibit decorations, of which 35.5% have incised or trailed lines, while 53.3% are cord impressed, dowel impressed, or cord-wrapped tool impressed (Hahn and Trader 2020:250). Cord impressions on lips were identified on the exterior surface, which is typically associated with Western Basin Tradition or Castor phase vessels (McCullough 2011:201). Cord-wrapped tool impressions and incised or trailed lines, as well as punctations, are common decorative motifs at the Morrell-Sheets site (McCord and Cochran 1994:46–54).



Figure 7. Vessel 70 collared rim (from Trader et al. 2020:Figure 89; photo by Eric Edelbrock).

Superior lip decorations included channeled with cord-wrapped dowel impressions, oblique cordmarked dowel wrapped, oblique slashed, straight cordmarked dowel impressed, straight slashed, wedge cordmarked dowel impressed, and dowel incised (Hahn and Trader 2020:255).

Of the vessels identified at the Hodges site, 27.7% ($N = 20$) exhibited Fort Ancient motifs only and 34.7% ($N = 25$) exhibited Western Basin Tradition motifs only, while 4.1% ($N = 3$) exhibited both Fort Ancient and Western Basin Tradition motifs on the same vessel (see Figure 6; Hahn and Trader 2020:Table 49). Ceramics at the Hodges site are representative of several late precontact ceramic traditions, including Fort Ancient, Western Basin, Castor phase, and the Albee phase. The combination and co-occurrence of these decorative motifs suggest interaction and exchange between multiple groups.

Floral Remains

Recovered macrobotanical remains consisted of charred wood, nutshell, corn, squash rind, wild fruit seeds, and environmental seeds (Leone 2020:292). Over 7,300 charred plant specimens were recovered. Wood charcoal composed 89.9% of the assemblage, nutshell composed 4.8%, corn composed 4.8%, and 1.7% consisted of fruit and environmental seeds. In addition, one squash rind was found (Leone 2020:292–293). Identified wood taxa included maple, sycamore, walnut, hickory, elm/hackberry, oak, ash, honey locust, and pawpaw (Leone 2020:293). Ninety-one percent of the corn assemblage consisted of kernels with a small quantity of cupules. No cobs, glumes, or stalks were recovered. Leone (2020:297) suggests that “the somewhat low density of corn at the site, in combination with a complete absence of cobs, glumes, and stalks, suggests that corn harvesting and processing was not taking place at the site, rather, it is most likely that corn was brought to the site for consumption.” The fruit-seed assemblage is depauperate and consists of a few specimens of grape, blackberry/bramble, and pawpaw (Leone 2020:298). Leone (2020:299) states that the “low to moderate densities of plant foods recovered at the site are not suggestive of large-scale seasonal harvesting and processing of corn or nuts. . . . The plant assemblage is more indicative of seasonal or short-term occupation than year-round residential habitation.” Additionally,

the macrobotanical remains recovered from the site are consistent with those described for other Oliver phase sites. Macrobotanical assemblages of Oliver sites are typically dominated by nuts, corn, and wild fruits, with native seed cultigens, beans, and squash as minor components. Corn and native seed cultigens become less visible through time. The botanical assemblage from 12MG564 includes all of these Oliver phase site characteristics, except that native seed cultigens and beans are absent [Leone 2020:302].

Corn also plays an important role in the diet of the Albee phase people at the Morrell-Sheets site. Corn was abundant and ubiquitous at the site and found in all

but one feature. Other cultigens at the site included little barley (Bush 1994:100). Bush noted,

[T]he plant assemblage at the Morrell-Sheets site is intermediate between those of Fort Ancient and Emergent Mississippian peoples. The horticulturalists at Morrell-Sheets were like the Emergent Mississippian groups to their south and west in that they continued to cultivate native crops along with maize [1994:102–103].

Inhabitants at the Hodges site were fully invested in the Oliver phase subsistence system.

Hodges Site Summary

The Hodges site represents a predominately late precontact Oliver phase occupation. Chronologically, the site falls well within the temporal limits of the Oliver phase. Additionally, the ceramic assemblage reflects the co-occurrence of Fort Ancient Tradition and Western Basin Tradition motifs but also yielded sherds with both ceramic traditions on the same vessel, reflecting hybridity. Finally, floral remains recovered from feature contexts indicate full participation in the Oliver subsistence strategies.

It is most likely that the Hodges site represents a place that was occupied persistently by Oliver peoples between AD 1277 and AD 1424, a period of 150 years. The site probably represents a series of short-term encampments.

Late Precontact Cultural Overview

The White River valley was surrounded by dynamic and well-defined late precontact archaeological cultures including the Fort Ancient Tradition, Oneota Tradition, Western Basin Tradition, Mississippian, and Albee phase (Figure 8). Each of these exerted separate influences on the Oliver phase. One of the most distinctive elements of these archaeological cultures is ceramic tradition; they are summarized in Table 2. While these groups share similarities, they exhibit regional differences. An overview of the Oliver phase is presented in some detail as follows.

The Oliver Phase (AD 1200–1450)

The Indiana homeland for Oliver groups is the White River valley, consisting of the West Fork and East Fork Rivers (Figure 9). The White River drainage is part of the greater Mississippi River system and drains an area of over 29,000 km² in central and southern Indiana (Crawford et al. 1996:1). Oliver groups inhabited a diverse physiographic region, consisting of the Central Till Plain region, north of the Wisconsinan glaciation limits, and the Southern Hills and Lowlands region, south of the Wisconsinan glacial limits (Gray 2000).

Table 2. Pottery Attributes from Late Precontact Groups.

Pottery Tradition	Temper	Surface Treatment	Decorative Elements	Vessel Shape/Type	Vessel Outline	¹⁴ C Dates	Reference
Fort Ancient (Anderson Phase)	Grit/shell & grit; shell	Cordmarked; smoothed	Incised & trailed lines; curvilinear & rectilinear guilloche; punctations; strap handles	Globular/jars	Thickened rim	AD 1200–1400	Drooker 1997; Griffin 1966 [1943]; Henderson 2008
Western Basin (Springwells Phase)	Grit	Plain, Net impressed	Cord-wrapped dowel or cordage impressions; stab/drag	Elongated/jars	Castellations	AD 1160–1420	Carroll 2019
Albee	Grit	Cordmarked, Fabric Impressed	Tool impressions, cord-wrapped dowel impressions, trailed lines, punctation, and incising	Globular jars/ slightly elongated	Wedge-shaped collars; castellations	AD 800–1300	McCord 2005; McCord and Cochran 1994; Redmond and McCullough 2000
Castor	Sand/grit	Brushing, cordmarked, fabric roughened, smoothed, or plain	Cord-wrapped dowel or cordage impressions; dentate stamped, punctations; Lug handles	Globular to subglobular/jars	Cambered or straight rims; castellations	AD 1020–1400	McCullough 2015
Oliver	Grit; with limited amounts of shell	Plain or cordmarked	Incised & trailed lines; curvilinear & rectilinear guilloche; line-filled triangles; punctations. Also impressed decorations (see above); strap/lug handles	Subglobular jars with rounded bottoms/jars	Folded rims; excurve necks	AD 1200–1450	McCullough 2000, 2005; Redmond and McCullough 2000
Oneota	Shell	Plain	Trailed lines, rectilinear triangular; tool impressions; small, rounded handles	Globular/jars	Outflaring	AD 1100–1600	Henning 2001

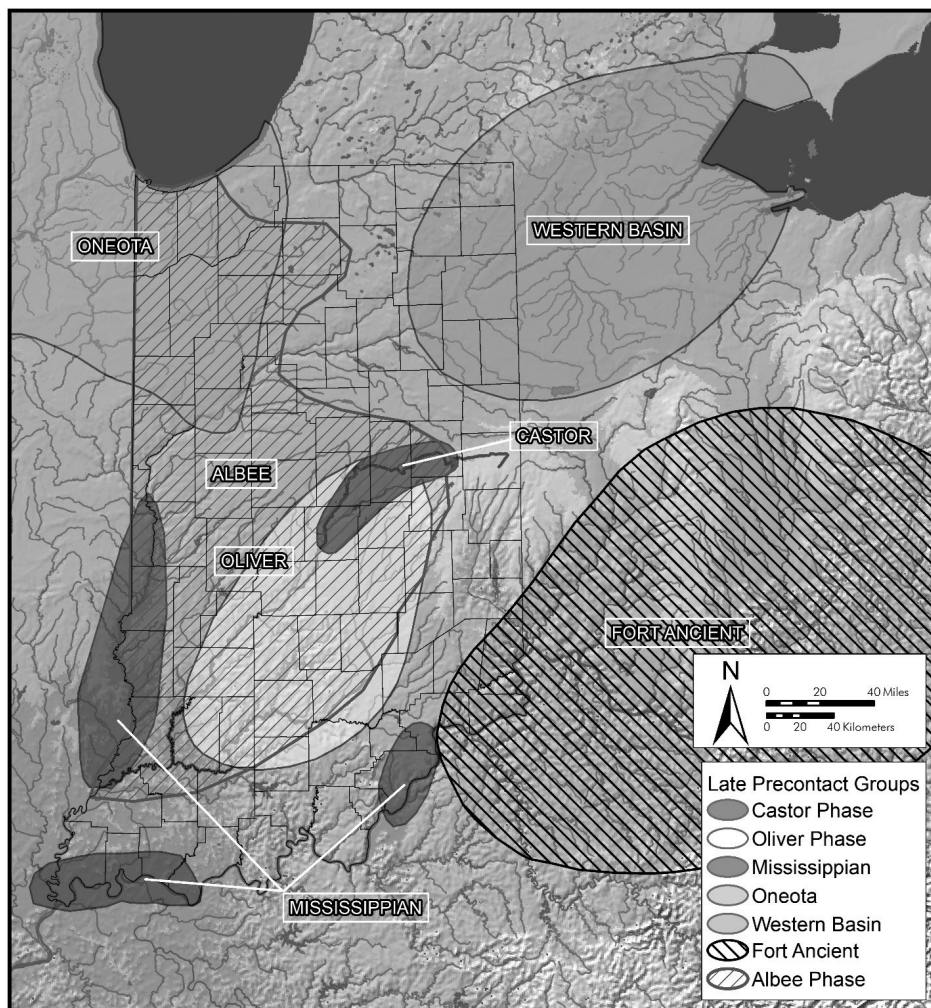


Figure 8. Oliver phase in relation to other late precontact groups (adapted from Trader et al. 2020:Figure 172).

Oliver sites are distributed throughout the White River valley but cluster in Hamilton and Marion Counties, where most archaeological investigations have been conducted (see Figure 9). The most notable characteristic of the Oliver phase is a distinctive pottery style that reflects a co-occurrence of decorative elements of the Fort Ancient Tradition with those of the Western Basin Tradition (see Table 2; Redmond and McCullough 2000:663).

The Oliver phase was defined as an “elastic concept and was initially developed as a ceramic construct” (McCullough 2011:34). Taxonomically, Oliver has been referred to variously as the Hauelsen component, as the Oliver component, or as a focus, complex, or phase (Dorwin 1971; Griffin 1946, 1966 [1943], 1978; Redmond and McCullough 2000). Oliver was defined as a phase by Dorwin in “deference to Griffin’s use of the name Oliver for this complex on a map of his 1946 synthesis of

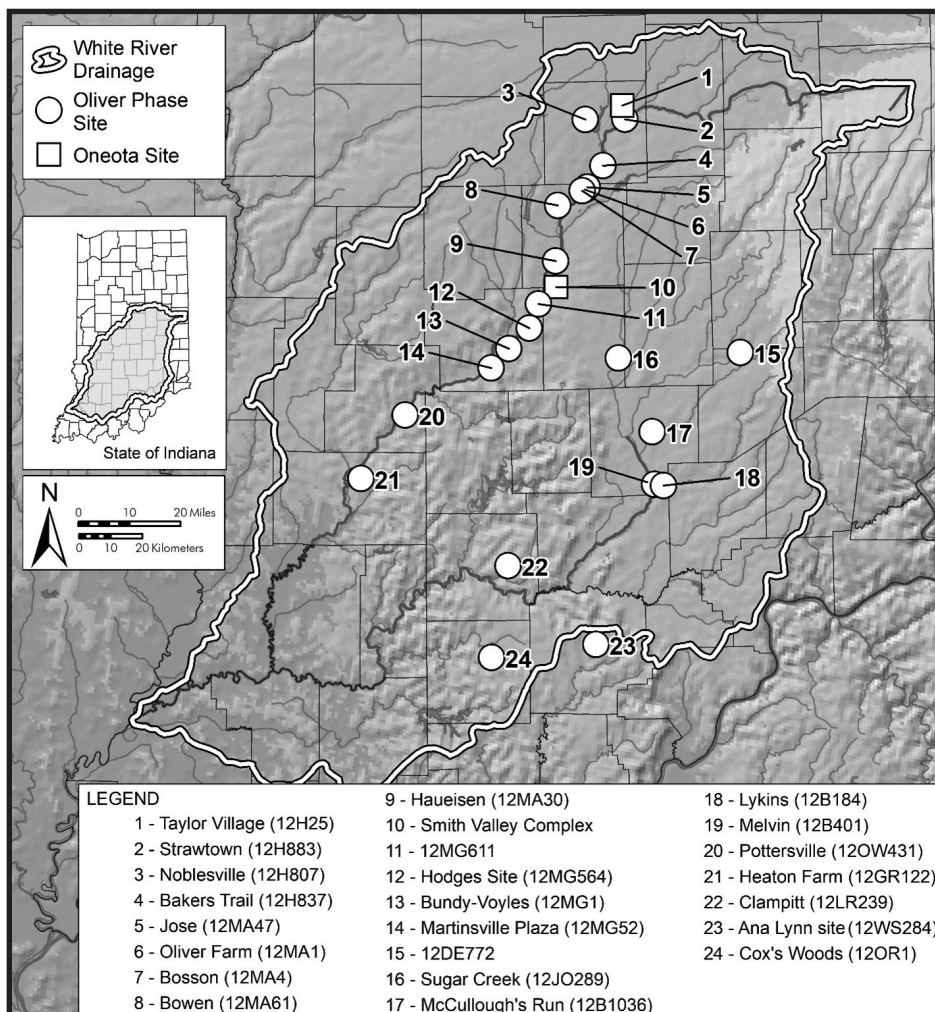


Figure 9. Location of sites mentioned in the text (adapted from Trader et al. 2020:Figure 173).

eastern United States prehistory" (Dorwin 1971:209). The phase designation was based on archaeological materials recovered from the Bowen (12MA61), Strawtown (12H883), Haueisen (12MA30), Bosson (12MA4), Jose (12MA47), Conner Prairie (12H4), and Oliver Farm (12MA1) sites (see Figure 9; Dorwin 1971:209; Griffin 1978:551). By 1978, the Oliver phase was deeply entrenched as a taxonomic unit in archaeology of the Midwest (Griffin 1978:551). However, the designation of an Oliver phase has been questioned by Stothers and Schneider (2003:177), who indicate that the Oliver phase has never been formally defined.

Prior to extensive radiocarbon dating, Griffin (1952:Figure 205) placed Oliver relatively late chronologically, between AD 1400 and AD 1700. Over 20 years later, Griffin (1978:551) dated the Oliver phase to between AD 950 and AD 1250. The earliest ^{14}C dates for an Oliver site were reported from the Oliver Farm site at cal AD 1060 \pm 100 (M-2010; Dorwin 1971:382). Recent calibration of the Oliver Farm site

date places it between cal AD 977 and AD 1294 [$p = 1$] (see Supplement 2). Dorwin (1971:383) reported ^{14}C dates between cal AD 800 and AD 1300 at the Bowen site. Since then, accelerator mass spectrometry (AMS) dating and more precise calibration methods have refined Oliver phase chronology. Now, the Oliver phase is confidently dated between cal AD 1200 and AD 1450 and overlaps with both the Castor phase (AD 1000–1400) and the Albee phase (AD 900–1300; McCord 2010:75; McCullough 2015:256; Redmond and McCullough 2000:672).

Oliver Origins

Over the past 30 years, significant research has been conducted within the White River valley regarding the Oliver phase (Bush 2004; McCullough 1991, 2000, 2003, 2005, 2015; Redmond and McCullough 2000; Strezewski 2002). The following discussion utilizes those resources to present a synthesis of Oliver phase material culture, subsistence, settlement, and mortuary practices.

Pottery is the most diagnostic element of the Oliver phase and consists of ceramics with cord-impressed and incised decorations (Redmond and McCullough 2000:663). Oliver pottery exhibits a co-occurrence of Late Woodland Great Lakes Impressed wares, or Castor phase, and Fort Ancient decorative motifs (Figures 10 and 11).



Figure 10. Fort Ancient–style vessel from the Ana Lynn site. (Photograph courtesy of the Indiana Department of Transportation; photo by Patty Jo Korzeniewski.)



Figure 11. Castor Oblique dowel-impressed ware, Martinsville Plaza site (Catalog 182, Glenn A. Black Laboratory of Archaeology, Indiana University–Bloomington; photo by Eric Edelbrock).

Castor phase ceramic vessels are globular to subglobular, with cambered or straight rims. Some cambered rims display modest castellations, with an extruded rim below the peak (see Figure 11; McCullough 2015:259). Lug appendages are present but occur only on vessels with cambered rims. Decorations are found on the rim and the lip, and none is found on the vessel neck; however, impressed decorations are occasionally found on the interior lip/rim surface (see Table 2). Castor phase vessels have tall rims that often consist of a wedge-shaped collar or a strip of clay added to the exterior surface (see Table 2). Exterior surface treatments include brushing, cordmarking, fabric roughening, smoothing, or plain (McCullough and White 2005:145). The lip is decorated with a variety of impressed forms, including cord, tool, dowel, dentate stamped, and punctations (McCullough and White 2005:153).

These Great Lakes Impressed pottery types were first noted by Griffin (1966 [1943]). Helmen (1950) described “Unclassified Type I” and “Unclassified Type III” ceramic categories following examination of the Oliver Farm ceramic assemblage and noted affinities to Riviere au Vase and Younge site ceramics from Michigan. Dorwin (1971) defined the “Bowen series” following examination of ceramics from the Bowen site, which also shared similarities with the Western Basin Tradition pottery. McCullough’s (2005:162) “Castor phase” designation was in part based on

Bowen series ceramics. At Castor phase sites, Great Lakes Impressed pottery does not co-occur with Fort Ancient varieties (McCullough 2005:162–167).

Incised ceramics incorporated Fort Ancient decorative motifs, including curvilinear guilloche (Redmond and McCullough 2000:663). Vessels are predominately grit tempered; however, minor amounts of shell tempering are reported (see Table 2; McCullough 2003:142). V-shaped strap handles are reported on some vessels, with small castellations above the handle (McCullough 2003:142). Vessel surfaces are cordmarked, with smoothed over rim folds. Vessels are subglobular, with rounded bottoms and broad excurvate necks. Some rims are folded and may be decorated with short wide alternating oblique lines. Most decorations are limited to the neck and shoulder of the vessel. Decorations were made with trailed lines, which resulted in curvilinear or rectilinear designs, line-filled triangles, and alternating oblique lines. Punctations were occasionally added to trailed-line designs on the neck (see Figure 10; McCullough 2003:142). Incised decorative elements have been attributed to similarities with Middle Fort Ancient Anderson phase groups in the Ohio Valley.

McCullough (2003:147) notes that the Oliver phase is “distinguished by the consistent co-occurrence and subsequent blending of two pottery traditions, each with distinctive morphology, motifs, and methods of decorative execution.” Archaeological investigations have documented hundreds of sites with Oliver phase components that retain the two dissimilar ceramic traditions in direct association (McCullough 2003:147). A seriation of ceramics from northern and southern Oliver phase sites indicates that the blending of these two ceramic traditions on the same vessels occurs more often in southern sites and that those vessels date later within the Oliver sequence (McCullough 2000:293–294). Pottery from Cox’s Woods and the Clampitt site, located in Orange and Lawrence Counties (see Figure 9), respectively, exhibited both decorative traditions on the same vessels. Both sites date to the fourteenth and fifteenth centuries (McCullough 1997:66; Redmond and McCullough 1993:103). Work at the Ana Lynn site in Washington County, Indiana, has also identified Western Basin and Fort Ancient motifs on the same vessels (see Figure 9; Jackson 2005, 2012; McCullough and McCullough 2008).

The chipped-stone and ground-stone artifact assemblages at Oliver phase sites are typical of those from most late precontact sites across the midwestern United States. Projectile point assemblages are dominated by small triangular point forms, identified as Madison. Other chipped-stone tools include expanded-base drills, hump-backed knives, scrapers, graters, and debitage. A majority of the chipped-stone tools were manufactured from locally available gravel cherts or nonlocal chert types. Ground-stone tools included celts, pitted stones, sandstone abraders, and grinding stones (Redmond and McCullough 2000:665–667). Conspicuously absent from Oliver phase lithic and bone tool assemblages are implements related to agricultural activities, such as chipped-stone, mussel shell, or scapular hoes. Also absent is any debitage that exhibits silica polish, which is commonly found at Mississippian or Fort Ancient sites (McCullough 1997:67). A scapular hoe was reported

from the Bowen site (McCullough 2003:149). The relative absence of agricultural implements in Oliver phase sites is intriguing given the importance of corn in the Oliver phase diet.

Archaeobotanical remains have revealed that Oliver phase people have a signature botanical pattern that is distinct from that of either Mississippian or Fort Ancient groups (Bush 2004:127). Oliver phase peoples combined plant cultivation with the collection of wild plant foods (Bush 2004:126). Cultivated crops incorporated tropical and indigenous cultigens and included corn, beans, squash, tobacco, and limited amounts of chenopodium, little barley, maygrass, sunflower, and sumpweed (Bush 2004:126). While some plant foods representative of EAC oily and starchy seeds have been recovered from Oliver phase sites, they did not play as significant role in Oliver phase diets as they did for other late precontact groups (Bush 2005:225, Figure A.4). Gathering and consuming wild plant foods, including nut mast and seeds, were also important to the Oliver phase diet. Nut assemblages were dominated by hickory, but acorns, walnut, and hazelnut also occur across site assemblages (Bush 2004:97–98). Other important wild plant foods included blackberry, sumac, purslane, and grape (Bush 2004:98). Common beans have been identified but are not ubiquitous and have been dated to 539 ± 39 BP and 620 ± 40 BP (Baltz and Cochran 2009; Bush 2004:92). Squash rind has also been recovered from Oliver phase sites but is less common than beans (Bush 2004:94; Leone 2020:301). This overall pattern suggests a dependency on corn at the expense of indigenous EAC plants, as well as the gathering of wild plant foods, including a variety of seeds and nut mast (Bush 2004:98). However, Oliver groups were not as dependent on corn as contemporary Mississippian groups (Bush 2004:100). In fact, Bush (2005:225, Figure A.4) demonstrated that, through time, the consumption of corn declined as that of nut mast increased.

A diverse range of terrestrial, aquatic, and semiaquatic animal resources were exploited (Redmond and McCullough 2000:671). Terrestrial animals exploited included white-tailed deer, elk, bear, raccoon, squirrel, opossum, porcupine, woodchuck, striped skunk, and gray fox. Bird remains consisted of wild turkey. Aquatic resources included a variety of fish that included, but was not limited to, sunfish, black bass, largemouth bass, crappie, suckers, and catfish; additionally, shellfish remains were also recovered. Semiaquatic animals included beaver and muskrat (Redmond and McCullough 2000:671). Overall, animal exploitation patterns during the Oliver phase were rather typical of most late precontact period groups.

Redmond (1991) has defined three major Oliver settlement types in the East Fork Valley (Table 3). These types include large habitation sites (or villages), small habitation sites, and extractive camps (Redmond 1991:20). A fourth possible site type consisted of a small cemetery (12B85) that may reflect a special-purpose mortuary facility (Redmond 1991:22).

Examples of nucleated palisaded villages include the Clampitt and Cox's Wood sites and the Strawtown Enclosure (see Figure 9; see Table 3; McCullough 2008:36; McCullough and Graham 2010:38). The Bowen site (12MA61) represents

Table 3. Oliver Phase Settlement Types.*

Settlement Type	Geographic Placement	Distance to Major Streams	Size	Artifactual Remains	Architectural Elements	Site Layout	Feature Types	References
Large Habitation	Floodplains & terraces	1 km	>1 ha	Ceramic, lithic & faunal concentrations	Palisades; earthen embankments; ditches; subrectangular structures	Circular; linear	Burials, pits, hearths, midden deposits	Dorwin 1971; Graham 2011; McCullough 2008, 2011; McCullough and Graham 2010; McCullough and Wright 1997; McCullough et al. 2004; Redmond 1991
Small Habitation	Lowland & Upland locations	Near tributary streams	<1 ha	Triangular projectile points & low densities of Oliver phase pottery	Circular & rectangular structures	—	Burials, middens	Jackson 2005, 2012; Redmond 1991; Strezewski 2002; Trader et al. 2020
Extractive Camp	Upland locations	>1 km	<1 ha	Lithic scatters; triangular points	—	—	—	Redmond 1991

Note: After Redmond 1991.

the remains of a large circular village without a palisade (Dorwin 1971:301). The Bundy-Voyles site (12MG1), situated on the low floodplain ridge of the West Fork of the White River, exhibits a linear configuration rather than a circular one (see Figure 9; McCullough and Wright 1997:25). Domestic subrectangular structures have been identified at the Clampitt (12LR239), Cox's Woods (12OR1), Strawtown Enclosure (12H883), and Sugar Creek sites (12JO289; see Figure 9; Graham 2011:118; McCullough 2011:118; McCullough and Wright 1997:99; McCullough et al. 2004:107).

Small habitation sites are less than 1 hectare in size and are considered small seasonal encampments (Redmond 1991:20). Occupants of small habitation sites performed a wide range of seasonal subsistence and domestic activities, as well as participated in mortuary rituals (Redmond 1991:27). Redmond elaborates that those activities

may have included the tending of more distant agricultural fields in the alluvial bottoms, shellfish collecting, hunting, fishing, nut collecting, or the quarrying of lithic raw materials [Redmond 1991:28].

These sites were found in areas separated from permanent villages, where occupants exploited seasonally available resources, and were inhabited by small dispersed, possibly family, groups (Redmond 1991:28).

Examples of small habitation sites include Pottersville (12OW431) in Owen County, Ana Lynn (12WS284) in Washington County, and Hodges (12MG564) in Morgan County (see Figure 9; Jackson 2005, 2012; Strezewski 2002:5). A rectangular structure was found at Ana Lynn, while a circular structure was found at Pottersville (Jackson 2005, 2012; Strezewski 2002:5). Strezewski (2002:52) suggested that the semisubterranean structure at the Pottersville site indicates a winter occupation.

The final settlement type is extractive camps, evidenced by small-sized lithic scatters with triangular arrow points in an area devoid of midden deposits and pottery (see Table 3; Redmond 1991:22). Tying this site type to the Oliver phase would be difficult without associated pottery. Otherwise, it would be like other Late Woodland or late precontact sites, such as Albee phase or Mississippian sites.

Archaeological investigations at Oliver phase sites have only found human interments within habitation areas, and no mounds, cemetery areas, or ossuaries have been identified (McCullough 2011:36). Mortuary goods are rare from Oliver burials. Only two celts and two bone awls were found at the Bowen site (Dorwin 1971:297–299). Redmond and McCullough (2000:672) suggest that Oliver mortuary behavior is reflective of an egalitarian kin-based society.

Oliver Phase and Migration

McCullough (2000:308) attributes the development of the Oliver phase to the migration of Fort Ancient peoples from the Great Miami River valley of southwestern

Ohio and southeastern Indiana. McCullough (2000:301) has rejected in situ development for Oliver groups in the region and posits that the beginning and the end of the Oliver phase are the results of long-distance migration. Migration into the White River valley by Native groups was based on several causal factors that included that it was a lightly inhabited area, that it could support a focal economy based on corn agriculture, and that the immigrants held a predisposition for frequent moves because of their swidden agricultural practices (McCullough 2000:304).

However, in my opinion, McCullough does not provide compelling or supporting data that Fort Ancient groups migrated from southwestern Ohio or southeastern Indiana. Oliver material culture, settlement and subsistence systems, and mortuary behavior are significantly different from that found in Middle Fort Ancient Anderson phase groups from the Great Miami River valley. Dorwin (1971:294–295) reported that Georg K. Neuman analyzed the human skulls excavated from the Bowen site and that they were classified as Ilinid, except for one specimen, which was classified as Muskogid. This analysis suggests some movement or migration of people; however, it used an outdated method of analysis. Recent studies using isotope analysis to track the spread of maize are more useful for tracking human migration (see Cook and Price 2015; Cook and Schurr 2009).

Oliver is a unique cultural phenomenon that has its own distinctive subsistence base, settlement system, mortuary behavior, and artifacts. Oliver people fall within a frontier region and can best be described as an amalgamation of several cultural groups. In my opinion, the Oliver phase peoples germinated from local Late Woodland populations that used the fluid White River valley frontier. They adopted the material culture that suited them from a variety of late precontact groups. That selection, adoption, and culling of traits coalesced into what we now recognize as Oliver. In the following section, I build on earlier models that also considered Oliver to fall within a frontier (Bush 2004; Dorwin 1971; McCullough et al. 2004).

Frontiers

The idea of frontiers is not unknown to archaeologists and was a subject explored in *Southeastern Archaeology* (King and Meyers 2002). The following discussion explores the concept of frontiers with respect to the formation of the Oliver phase.

Early concepts of frontiers defined them with respect to colonization, imperialism, or their location on the margin of the inhabited world (Adelman and Aron 1999; Kristof 1959; Waselkov and Paul 1980–1981). Adelman and Aron (1999:815) have defined the frontier as “a meeting place of peoples in which geographic and cultural borders were not clearly defined.” Rice (1998:49) defines frontiers as “the outer margins of an expanding center’s settlement and societal interactions.” Furthermore, Rice (1998:47) suggests that frontiers are the locations at which “culture contacts initially take place.” Changes that occur at frontiers, such as demographic, social, political, economic, and technological, “occur through complex interactions between people, environments, and material culture” (Rice 1998:47).

Meyers (2017:145) suggests that “frontier areas are identified archaeologically in part by the presence of a least two distinctly different types of material culture.” Parker states,

Frontiers are areas between. They are places at the edge of cultural spheres and therefore embody the loci within which culture contact takes place. . . . Furthermore, since the nature of interaction taking place in frontiers can be influenced by a variety of political, demographic, cultural and economic factors, frontiers are extremely dynamic and often unstable zones that exhibit a marked degree of variability through space and time [Parker 2006:77].

Previously, I have examined frontiers of Late Woodland groups in the uplands of the Illinois River valley (Trader 2011:125). The following discussion borrows some concepts of frontiers from that study (Trader 2011:125–126). Lightfoot and Martinez (1995:475) warn archaeologists that frontiers should not be thought of as borders that inhibit “intercultural relationships” but should be considered “interaction zones where encounters take place between people from diverse homelands.” That is, frontiers should not be treated as having static, unmoving borders but should be thought of as dynamic and fluid, ever changing, allowing the movement of ideas, technological innovations, and stylistic attributes. Lightfoot and Martinez (1995:474) “regard frontiers as possible zones of cultural interfaces in which cross-cutting segmentary groups can be defined and recombined at different spatial and temporal scales of analysis.”

Frontiers may remain in either a state of ethnic merger or of fragmentation (Rodseth 2008:90). For example, hybridization occurs with increasing interaction between groups, which results in the merging or reduction of ethnic identity; where once distinctive features occurred, they become now blurred (Rodseth 2008:88). To give a more specific analogy, distinctive pottery types, which serve as discrete ethnic markers, may become mixed when potters of different ethnicities interact and exchange ideas on ceramic production and design. In contrast, fragmentation occurs through “increasing separation between previously united groups,” which results in multiplying “the number of ethnic groups by unweaving social networks and then hampering or tightly regulating the exchange of personnel and information between them” (Rodseth 2008:88).

Discussion

Frontiers are dynamic—rather than immutable and static—places, where interaction can occur freely.

The northern portion of the Oliver phase area overlaps that of the Castor phase, while the boundaries of the Fort Ancient region are found to the southeast (see Figure 8). The Albee phase is found to the west and north and subsumes almost all the Oliver territory (see Figure 8). Mississippian groups are found southeast, south, and west of Oliver groups and include Angel, Caborn-Welborn, Prather, and

Vincennes groups (see Figure 8). Oneota is found northwest of Oliver groups in northwestern Indiana, northeastern Illinois, southeastern Iowa, and southwestern Michigan (see Figure 8). Western Basin Tradition groups are located northeast of Oliver in northeastern Indiana, northwestern Ohio, and southeastern Michigan (see Figure 8). The movement and interaction of precontact groups with each other occurred throughout the late precontact period and is evidenced by the presence of similarities in their foodways, raw materials, finished artifacts, and ideas (Schroeder 2004:333–334). The late precontact world was a *mélange* of various ethnic and political spheres that ranged from large-scale polities and chiefdoms to tribal societies (Schroeder 2004). The White River valley occupied a central location that would have encouraged interaction among all these groups. That Oliver people interacted with other groups is undeniable based on the similarities of their material culture, settlement, and subsistence with those of surrounding groups.

Dorwin (1971:383) suggested that outside influences on Oliver sites originated from a wide geographic base as far west as South Dakota. Other areas included Iowa, Minnesota, southern Wisconsin, northern Illinois, and southern Ohio. Dorwin (1971:384) referred to Oliver as a frontier zone that was “between expanded Mississippian culture and other indigenous cultures. This frontier zone probably played the important role in the unique congregation of culture elements, particularly in the ceramics.” Furthermore, Dorwin (1971:389–390) reports that “marked ties of the Oliver phase to Fort Ancient, Fisher-Oneota, and beyond the Cambria-Mill Creek clearly define the frontier transfer zone.” The concept of frontiers and boundaries has also been suggested by McCullough (2000:317), who concluded that the region inhabited by Oliver people was “a dynamic area with open or relatively fluid societal boundaries, in contrast to an area of static, bounded societies that represent a barrier to integration.” Using macrobotanical remains, Bush (2004:6) suggested that Oliver “can be considered a boundary between the larger Fort Ancient, Mississippian, and Oneota traditions, a place where the unexpected might occur.”

As I have proposed before, the interaction between groups “resulted in the exchange of ideas and cultural traits in which groups copied each other; however, this would be likely only after multiple meetings” (Trader 2011:127). Furthermore, the “outcome would be a mixing of people, possibly as a result of intermarriage or mate exchange to create alliances” (Trader 2011:127).

It is possible that these alliances were established as a form of risk management to mitigate food deficiencies or avoid violence. One of the ways to effect risk management would be through exchange (Edwards 2020:65). Edwards notes that

evidence for exchange and interaction should show cooperation and trade with groups outside the immediate geographical regions so that localized environmental events would have been less likely to have affected trade patterns as well [2020:66].

The archaeological signature of this exchange and interaction would result in the hybridization of cultural traits, most evident in pottery.

I suggest that the Oliver phase arose from resident populations of Late Woodland groups, possibly Albee phase people. Ceramic traditions associated with the Albee phase include grit-tempered, cordmarked, collared, incised, and tool impressed vessels (McCord and Cochran 1994). Additionally, Albee phase subsistence relied largely on corn (Bush 1994). The Albee phase dates between AD 800 and AD 1300, which overlaps with the Oliver phase (McCord 2005:213). The sudden appearance of Oliver in central Indiana has been attributed to the in-migration of Fort Ancient groups from the Great Miami River valley (McCullough 2000:308). However, the already present resident populations interacting with other late pre-contact groups would have resulted in the selection and acceptance of certain cultural practices, which eventually became a distinctive settlement and subsistence pattern, resulting in its own separate cultural group.

Oliver Entanglements

The idea of “cultural entanglement” has gained popularity recently in archaeological and anthropological theory. According to Martindale (2009:61), “Entanglement builds on ideas of creolization and hybridity.”

Martindale (2009:85) suggests that archaeologists must understand that the past was “dynamic, permeable, historical, contextual and negotiated.” Martindale (2009:85) argues that no community is “free of entanglements; thus history is an ongoing reconstruction of identity, meaning and purpose that permits change when individuals are given or adopt sufficient latitude.”

It is my opinion that Oliver groups did not develop in a vacuum or without interaction with other nearby late precontact groups. Excavations conducted at the Strawtown Enclosure recovered shell-tempered Taylor Village ceramics and represent “the easternmost expression of the Oneota tradition and . . . an anomalous cultural expression in central Indiana” (McCullough 2008:162; see Figure 9). McCullough and Graham (2010:212–215) note that the later Taylor Village occupation is superimposed over the Oliver phase occupation at the Strawtown Enclosure. Oliver phase pottery has also been found at the Crouch site, part of the Oneota Smith Valley complex in Johnson County, Indiana (McCullough and Wright 1997:145). At the Bowen site, Dorwin (1971:264) identified shell-tempered Sharply Everted Rim pottery that is likely an Oneota vessel type.

Furthermore, Oliver phase pottery has been identified at Fort Ancient and Mississippian sites hundreds of kilometers from the Oliver region. A moderate amount of Oliver phase pottery has been recovered from the State Line site (33HA58) in Hamilton County, Ohio (Vickery et al. 2000:299–306, Tables 8.6 and 8.9), which has been attributed to imported vessels or “potters who migrated from the central Indiana region” (Vickery et al. 2000:306). Henderson (2008:791) reports that Oliver phase pottery has been recovered from the Fort Ancient Petersburg site in Boone County, Kentucky. Oliver phase pottery was also recovered from the Kenney site,

a Fort Ancient site in southern Boone County, Kentucky (Henderson 2008:792). French and Pollack (2021:217) report Oliver phase pottery at the Eva Bandman (15JF668) and Shippingport (15JF702) sites in Jefferson County, Kentucky, at the Falls of the Ohio River.

Oliver phase pottery was found at the Angel site, a large Mississippian complex in southwestern Indiana near the confluence of the Ohio and Green Rivers (Hilgeman 2000:121). At the Heaton Farm site, located in Greene County (see Figure 9), shell-tempered pottery associated with the Vincennes culture, located along the Wabash River, was identified (Pate 2003:35). Also, Mississippian pottery attributed to Falls Mississippian, or the Prather complex, was found at the Ana Lynn site (McCullough and McCullough 2008). The occurrence of Oliver phase pottery at Fort Ancient and Mississippian sites, as well as the occurrence of Mississippian pottery and artifacts at Oliver sites, is testament to the amount of interaction, trade, and movement that occurred during the late precontact period. Obviously, groups moved freely across the region and lived together. Possibly, intermarriage and fictive kinship ties between these groups were mechanisms used to reduce conflict situations.

While I agree that this area was a frontier, I suggest that central Indiana can be viewed as having been a crossroads where people from outside groups came together, which resulted in an amalgamation of cultural traits. The political structure of Oliver groups is probably most like that of Middle Fort Ancient societies. Henderson (2008:748) notes that Middle Fort Ancient sociopolitical organization was more formalized and consisted of villages composed of groups related by kin. Little evidence is present for elite behavior at Oliver phase sites. However, the construction and maintenance of ditched and palisaded villages would have taken a large investment of time and labor, so some leadership roles may have existed that were context specific and minimal.

Hybridity is an outcome of entanglement. New hybrid forms may be created through cultural change introduced because of migration, trade, political alliances, or intermarriage patterns (Deagan 2013:263). Hybrid material culture can best be categorized "as a product of multicultural engagements" (Deagan 2013:272).

The idea and concept of hybridity can best be applied to the Oliver phase, particularly when discrete decorative motifs originating from Fort Ancient and Western Basin Traditions are found on the same ceramic vessel. The region occupied by Oliver groups may best be described as a frontier zone where disparate groups coalesced, which resulted in the formation of a new cultural identity, referred to by archaeologists as the *Oliver phase*.

Interactions among people during the late precontact period are evident by artifacts diagnostic of Fort Ancient, Mississippian, and Oneota groups that have been recovered from archaeological sites in the region. The presence of these items is a testament to the fluidity of frontiers and the level of interaction that occurred. This interaction was integrated and resulted in the emergence of Oliver groups in central Indiana.

Conclusions

Reexamination of the emergence of the Oliver phase in central Indiana has been presented here. I have built on previous ideas of Oliver having occupied a frontier region, which would have allowed open movement of people and ideas. I suggest that Oliver grew from a resident population of Late Woodland peoples who interacted with other late precontact groups as a form of risk management. These interactions resulted in the emergence of the Oliver people, with their distinctive and unique material culture and settlement and subsistence pattern.

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Supplementary Materials

Supplementary material for this article can be found at <https://www.midwestarchaeology.org/mcja/supplemental-materials>.

Supplement 1. Graph of Comparative ^{14}C Dates from Known Oliver Sites

Supplement 2. Table of Comparative ^{14}C Dates from Oliver Phase Sites

Note on Contributor

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