Late in the Pleistocene, people from Siberia crossed the Bering continental connection into North America and soon began populating the future United States. They were hunter-gatherers, now called Paleoindians, who hunted the landscape for edible plants and animals, especially the large vertebrates of the period. These animals could have included the mastodon, mammoth, bear, horse, pony, tapir, peccary, camel, llama, elk, deer, caribou, bison, sloth, armadillo and giant beaver. Among the vertebrate fossils in Tennessee, fish, amphibia, reptiles, birds and mammals of all types and sizes may have been food; about 150 of these taxa are still known to occur in Tennessee. Nearly two dozen are now known to be extinct taxa and about two dozen taxa or their relatives now live elsewhere in the world (Semkem 1983, Martin and Wright 1967, Corgan and Breitburg 1996, Pielow 1991).

Among the animals, the elephantine mammoth and mastodon were destroyers of vegetation by trampling and eating; the mastodon a generalist regards plants including trees and the mammoth using grass-like plants, forbs and shrubs, as of the tundra initially. They traveled in herds and created trails which became deeply cut and subsequently used by sequential cultures of Native Americans (Myer 1928). The Paleoindians doubtless contributed to the extinction of the large Pleistocene vertebrates by deliberate hunting and using set fires. The Pleistocene beastiary doubtless modified the landscape as indicated above and the humans lowered their numbers by hunting and fires. The Paleoindians searched the landscape for plants which were exploited for medicinal and culinary uses (Corgan and Breitburg 1996, Swanton 1946, Hudson 1976).
ARCHAIC PEOPLE

With the advent of the Holocene, about 10,000 years before present, climatic warming brought about the return of the deciduous forest to eastern North America. The Paleoindian bands were believed to have absorbed into succeeding Archaic cultures which became more numerous, widespread and were to become of more sedentary habits. They disturbed the vegetation by clearing the forest for their encampments, obtaining wood for building construction (houses, villages), firewood and made special use of plants as food and medicine (Lewis and Kneberg 1958, Lewis and Lewis 1995). The late Archaic were using the crop plants squash and gourd and may have been cultivating them in gardens or fields. And, in addition to surface hunting for useful pieces of flint or chert, they may have mined it—as well as mining clay for pottery (Swanton 1946).

The extent in Tennessee of the location of Paleoindian, Archaic and later cultures' villages or encampments as known from surface and subsurface evidence are believed widespread in the state. The general location is that map by Lewis and Kneberg (ca. 1965) and that for the mound builders is by Shetrone (1900); map locations total about 380-440 sites well distributed across the state.

WOODLAND PEOPLE

About 2900 years ago a new culture, the Woodland people, replaced the Archaic—and lasted until about 900 A.D. (Sullivan 1995). Villages, crop fields and burial mounds were some of their cultural features. The bow and arrow use made them more efficient hunters of game. They mined salt, soapstone, flint/chert, earth (mounds) and clay (pottery). They collected shells, as mussels for food and pearls and covered parts of river edges with shell heaps (Lewis and Kneberg 1958, Swanton 1946, Hudson 1976, Chapman 1994). With their population growth, and
animals were hunted into decline, as the field soil fertility declined and firewood became scarce nearby, villages moved which resulted in double (and more) times landscape area disturbances. Woodland sites were common in Tennessee (Lewis and Kneberg 1958, Faulkner 1968, Milner 2004, Chapman 1994). Over two dozen wood types and potential food plants are known from the Little River valley village sites (Chapman and Shea 1981).

**MISSISSIPPIAN PEOPLE**

About 1100 years ago, a new culture, the Mississippian people replaced, or developed from, the Woodland. This culture persisted until about 1640 when the modern Native American tribes were seen by DeSoto in Tennessee (Swanton 1939). Poorly known were the Yuchi—probably derived from the stone grave race chiefly of Middle Tennessee (Brown 1897, Dowd 1972). Well known Mississippian centers were Etawah in Alabama (King 2003), Cahokia in Illinois (Pauketat 2009) and Hiwassee Island in Tennessee (Lewis and Kneberg 1946). Village and some long-term campsites were on river edges and terraces and also in some uplands (Delcourt and Delcourt 1996, Chapman 1994, Chapman and Shea 1981). They used some sites from the earlier Woodland or older cultures (as Chapman 1994). They built temple mounds (Milner 2004) and cultivated crops, opened the forest by wood procurement and burned it for visibility, ease of passage and game management. They dug for salt, the earth for mounds, clay for pottery, flint/chert, soapstone and collected freshwater mussels (Swanton 1946).

The whole area between the Cumberland and Tennessee rivers was said, at the time of the first explorers, to be without modern Native American settlements. The Shawnee had left the area about 1715 under pressure from the Cherokee. The Yuchi are believed to have left earlier (Imlay 1797, Swanton 1946).
The Chickasaw occupied northern Mississippi, western Tennessee and western Kentucky (Swanton 1946). Village or hunting camp locations are known in three locations in Wayne County. Open sites, fields or barrens, are known in Lauderdale and Carroll counties. The term barren and/or prairie was affixed to the names of several West Tennessee springs, creeks or branches (Harbert 1947, Peters 1957, Booklet Committee 1972, Gardner 1963, U.S. Geological Survey 1991). Sites labeled hickory barrens, or hickory-dogwood-blackgum barrens, or blackjack barrens, or postoak barrens or glades are thought to be successional vegetation resulting from tree invasion and growth on previously open land. They are reported variously in Weakley, Henry and Carroll counties (Killebrew et al. 1874, Safford 1854, Inman 1976, McInteer 1942, Booklet Committee 1972). Native American use of fire was thought by early as Michaux (1805) and later observers (Day 1953) to have modified vegetation type dominance.

In Middle Tennessee, the Highland Rim was, at or near the time of settlement, well known for barrens. The northern Rim, in particular, exhibited grassland patches in counties extending from Stewart to Sumner including Davidson. These were extensions and outliers of the Kentucky barrens seen by Michaux (1805) and reported by Haywood (1823, 1823) and seen in survey records (De Selm 1999) and mapped by Dicken (1935) and Transeau (1935). They were mainly grassy northward, and extended southward onto the western and eastern rims as grassy or brushy vegetation (Imlay 1797) seen in 1796-7 (Baily 1856), Steiner and De Schweinitz in 1797 in Williams 1928, the Bright Survey of 1807-8 (De Selm 1999), and other surveys (1826-1839) in Jackson and Putnam counties (De Selm 1999), and by later observers as Killebrew et al. (1874). They extended into northwest Alabama seen in 1807-8 (Stone 1971), in 1817-1822 (Griffith 1869), and Smith (1883), McCalley (1896) and De Selm and Webb (1997).
The Central Basin of Middle Tennessee received early mention of openings in the Hutchins Survey of 1748 (Williams 1928) which reported an “old Shawanee town” [Shawnee] and buffalo licks. Probable drought maintained cedar glades were reported by Safford (1869) and stream border openings maintained by floods studied by Shaver and Dennison (1928). Barrens were described in Rutherford County by Killebrew et al. (1874); Gattinger (1901) distinguished barrens from glades in the Basin. Certain barrens may have been disturbance-caused and/or maintained (De Selm 1992).

Openings in the forests of the Cumberland Plateau and Mountains were probably of four types, cliff edge flatrock vegetation (drought maintained, Perkins 1981) and marshes (lower soil aeration, Robinson and Shanks 1959, Dennis and Morgan (1987), stream edge openings held open by floods (De Selm 1992), and various openings on well-drained, at least moderately deep upland soils. Early travelers saw the grassy valley of Crab Orchard in Cumberland County (Baily 1856, Steiner and De Schweinitz in 1797 in Williams 1928) and grassy cove (Krechniak and Krechniak 1956). “Small prairies destitute of timber . . .” were reported in Cumberland and Van Buren counties by Killebrew et al. (1874). The latter grasslands may have been disturbance-induced and/or maintained (De Selm 1992).

Forest openings of the Valley and Ridge include those on river and stream borders where floods control vegetation density, cliff edges (Gattinger 1901), and rock glades (Safford 1869) which are believed drought maintained (De Selm 1993) and grassy openings (as old fields) of Cherokee origin seen in 1797 by Hawkins (Williams 1928). Barrens openings of Greene County were seen by Asbury in 1793 (Asbury 1821), barren hills of Roane County were seen by Steiner and De Schweinitz in 1797 (Williams 1928) and “grassy barrens” of Knox County were seen by Lenoir in 1806 (Patton 1958) and barrens of Campbell County were seen by Donalson in 1789.
Barrens from 12 counties are known from modern site studies (De Selm et al. 1969, 1993). Also barrens are known from 12 counties from land survey records (De Selm and Rose 1993, De Selm 1995, 1997, 1999, 2001, 2003, 2006). Barrens are also known in the Valley in adjacent states as Virginia (Ludwig 1999), Alabama (Allison and Steven 2001) and Georgia (The Nature Conservancy 2004, see also De Selm 1993).

Fields in the Blue Ridge which are believed to have been cultivated by the Overhill Cherokee were seen in river valley as the Little Tennessee and Hiwassee by Hawkins and Steiner and De Schweinitz (both ca. 1797 in Williams 1928), and the Watauga old fields of Carter County (Hyder, 1903). Open wetlands are known in Cades Cove of the Great Smoky Mountains where prehistoric Native Americans lived (Bass 1977, White 1984). Grassy balds of the mid to high Blue Ridge mountains were part of Cherokee legend (Gilbert 1954) and were thought to have been used by the Cherokee (Wells 1956). Whittaker (1956) considered them, perhaps with disturbance, part of the climax pattern and Mark (1959) thought their continuity was possibly controlled by drought. Gersmehl (1971) thought that each was a forest clearing made by mountaineers and herdsmen and Lindsay (1976) thought them to be maintained by grazing. Thus, these were stands of grassy-shrubby vegetation of possible disturbance origin and maintenance in which Native Americans may have been involved.

**LAND USE EFFECTS**

In a central Kentucky bog, the vertical sequence of pollen counts revealed grass pollen becoming more numerous millennia later than the Hypsithermal suggesting a Native American land use change (more fire, Wilkins 1988). The rapid invasion of early-seen grasslands by trees and the return of these areas to forest shortly after European settlement and fire interdiction is
also suggestive of a fire (with grazing and drought) caused and perhaps maintained vegetation (Killebrew et al. 1874, Kaufman et al. 1998, Collins and Steinauer 1998, Knapp et al. 1998).

The growth of agriculture from woodland to modern Native Americans resulted in vegetation destruction and soil impoverishment. And crop plants were continuously selected and improved as in East Tennessee (Ford 1985, Smith 1989, 1998). The growth of especially corn-dominated crop culture fostered population growth, Swanton (1946) estimates about 3000 people in Tennessee. However, the populations were decimated by disease introduced through their contacts with Spanish, French, and English explorers, traders and settlers (Dobyns 1983).

By contact with Native Americans during the past two hundred years, the names of plants used by them have been accumulated. Plant use categories total 186, which can be reduced to drug, food, fiber, dye and other uses of 3923 vascular plants in North America (Moerman 1998). Tennessee and southeastern lists total many fewer taxa and are compiled in Sharp (ca. 1940), Core (1967), Banks (1953), Hamel and Chiltoskey (1975) and Garrett (2003).

Plant uses have been determined indirectly by examining of surface organic deposits for pollen and spores (Delcourt and Delcourt 1996), and seed fruit and vegetative plant fragments (Shea 1993, Shea in Chapman and Shea 1981), at archaeologic sites. Examination of wood charcoal of nearly two dozen tree taxa archaic to historic sites in the Little Tennessee River Valley saw decline in use of 14 hydrophyte and mesophyte tree taxa which was interpreted as meaning land clearing, firewood collecting, and, in some cases, collecting seed or fruit for food. Percentages of oak, hickory, chestnut and perhaps dogwood and sourwood remained steady over the whole period indicating their preferential use for firewood and other uses even though the more distant uplands must have been used as the source, at least later. Increased abundance of reedcedar, tulip tree, pine and perhaps sassafras is thought to indicate invasion of these taxa onto
disturbed edges and abandoned fields, and their use as they became of the proper size. Their invasion of such sites was examined by Smith (1968). Increase in cane charcoal over this period suggests increased use and perhaps increased abundance as an invader following forest disturbance (Chapman and Shea 1981).

**SUMMARY AND CONCLUSIONS**

Native Americans had multiple kinds of landscape and biotic influences during their several thousand years tenure. One involved tree and subordinate vegetation cutting for establishment of buildings, villages, and mounds (during earth removal). Plant collecting for food, fiber, dye, drugs and other uses changed forest composition. Removal of dead/deadened trees and down branches for firewood changed nutrient cycles. Open land establishment brought invasion of pine, cedar and tulip poplar (Chapman and Shea 1981) with at least one grass-dominated old field stage proceeding them (Quarterman 1952, Shankman 1990, Smith 1968). On uplands, disturbances may have caused increased forest oak and pine presence (Delcourt and Delcourt 1991). Digging for mound-earth, clay for pottery, soapstone, and flint or chert resulted in surface or pit soil and vegetation disturbances. Surfaces of mounds were areas newly available for succession as were shell heaps which were subject to river floods. Fire, escaped campfires, and fires set for vegetation or game “management,” modified initially the forest understory (surface fires) (De Selm and Clebsch 1991, De Selm et al. 1991) and may have resulted in grassland expansion (Curtis 1959).
LITERATURE CITED


