

# Native Use of Fire – Incomplete Notes and Quotes<sup>1</sup>

## Conservation Group and Agencies Interpretation

“At least 11,000 years ago, an invasive species, *Homo sapiens*, arrived in North America and the consensus is that their hunting may have contributed to the extinction of most of the continent's large mammal species.... Recent research indicates that Native Americans had a substantial impact on the landscape long after the large mammals went extinct and well before the Europeans arrived.

In New England it appears that forests were regularly burned by native peoples in order to clear the understory, thus making their bow hunting easier. Along the coastline, forests were burned to create grassland, so that its associated game species could thrive. Although this human-altered landscape was certainly more ‘natural’ than what happened to the area after it was colonized by Europeans, one can debate if this prehistoric time span is the ‘ideal’ conservation target.” Pg. 3.

Connecticut Audubon Society. 2010. Connecticut State of the Birds Report. *Citizen Scientists Contribute to Conservation*. Fairfield, CT.

“Native Americans burned extensive portions of the forest every 1 to 3 years in order to make the forest habitable. The grassy understory which followed the fires provided improved forage for game animals such as deer and turkey. Travel became easier and the increased visibility aided in defense. Forests with thick woody understories, so prevalent today, were limited ‘to swamps and areas temporarily uninhabited by Native Americans’.

“The Connecticut Division of Forestry is utilizing controlled fires at this site to replicate the effect that the Native American fires had on the forest. The goal is to restore the forest to a semblance of that of the pre-colonial era. Repeated controlled fires will be used to replace the woody understory with a herbaceous one similar to that found when the Europeans first settled New England.

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## State of Connecticut Division of Forestry Information Sign (direct transcription)

“For thousands of years, practices of the Native Americans on Martha’s Vineyard, known as the Wampanoag, had profound effects on species composition and landscape structure. The Wampanoag created drastic changes on their surroundings predominantly through large-scaled

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<sup>1</sup> Source materials, handwritten notes and other materials in the Harvard Forest Archive

burning, which assisted in hunting game, maintaining burning patches, and creating fertile soils for cultivations”.

“Burning large tracts of land would also assist in maintaining berry patches, provide space to plant crops, facilitate hunting, and allow the growth of succulent vegetation to attract deer. These fires had a massive influence on the landscape, drastically altering structure and species composition”

“Travelers found an open landscape since ‘...a substantial portion of Martha’s Vineyard was open at this time”.

“For thousands of years, fires set by the Wampanoag assisted in maintaining the open nature of the Vineyard landscape. These fires aided in creating savannas and open woodlands where grasses and forest met. As these surface forest killed off aboveground vegetation and reduced surface organics a diversity of grasses, shrubs, and herbs were able to persist throughout on Martha’s Vineyard”.

#### **TTOR -- Capace 2001**

“Lightning-caused fires are rare on Cape Cod, but even before Europeans arrived in the 17th century, Native American Indians used fire for a variety of purposes including clearing away underbrush, promote berry production for their own use and to increase food for wildlife. After the Pilgrims arrived wildfires have been widespread on the outer Cape until the last half of the 20th century have been more successful.” (sic)

“Decades of fire suppression altered historic fire cycles and allowed wildland fuels to accumulate, again raising the threat of wildfires which could threaten cottages within the Seashore boundaries.”

“In 1986, the National Park Service in cooperation with the University of Massachusetts/Amherst initiated applied research on the effectiveness of varying season and frequency of treatments on forest composition, fuel loading, and fire behavior...”

**Montague Sand Plain** – “The primary purpose of the site is to protect and preserve an outstanding example of a xeric (dry) outwash pitch pine-scrub oak barren natural community, its associated biota and its ecological processes.

Paleoecological evidence strongly suggests fire was a common occurrence on the Montague Plains from 500 to at least 2,000 years before European settlement. Throughout North America, prehistoric Native Americans used fire as a landscape management tool to increase browse and mast for game species, drive game, increase production in certain food-bearing plants, ease travel through the wilderness by clearing underbrush, communicate among groups, facilitate effective defense of their communities and territories, and, once agriculture was adopted, to clear and fertilize crop lands.

Fires have occurred in every month of the year on the Plains, but are most frequent in April and May. This pattern is consistent with the fact that the lowest average relative humidities in the region occur in April and May, that leaf-out of deciduous species on the Plains has not occurred leading to very low fuel moisture conditions, and that this period corresponds with the Massachusetts legal open burning season.”

<http://www.umass.edu/nrc/nebarrensfuels/index.html>  
(Patterson and Crary – UMass and National Park Service)

“Native American, pre-Columbian inhabitants of southern New England not only cleared forests for agriculture (Byers 1946), but also created open woodlands that allowed passage for hunting while providing food sources for game species (Day 1953). American Indians used frequent low-intensity surface fires in the spring and fall to maintain areas of open forests for easier hunting and to stimulate the production of both hard and soft mast (nuts/acorns and berries/fruits, respectively) in the chestnut/oak (*Castanea dentata/Quercus* spp.) forests of the Northeast (Bromley 1935, Day 1953, Magee and Ahles 1999, Wade et al. 2000). At a landscape level, these frequently burned open areas probably occurred within a mosaic of less frequently burned mature forests (Patterson and Sassaman 1988).

Modern Massachusetts oak forests managed for wood products lack many of the important characteristics of fire-maintained oak woodlands, including both understory species composition and overstory structure.”

*Hawthorne. 2004. Ecological Restoration of fire-maintained oak Woodlands in Massachusetts. MS Thesis University of Massachusetts.*

“Both Native Americans and European settlers ignited fires historically... When European settlers arrived, Native American populations ranged in density throughout the Northeast, with the highest densities along major rivers and along coastal areas. Throughout New England, many other areas ranging from Narragansett Bay to Salem were described as vast open fields, due to intensive Native American land-use.”

*Raleigh et al. 2003 Sand Barrens Habitat Management: A Toolbox for Managers*

### **Ethnohistorical Arguments and Evidence**

“All the people here are very fond of tilling the soil, and store Indian corn for the winter, which they preserve in the following way: they make trenches on the hillsides in the sand, five or six feet, more or less, deep; put their corn and other grains in big sacks made of grass, and throw them into these trenches and cover them with sand three or four feet above the surface of the earth. They take from their store at need” (Champlain (1906:126).

Hart, J. P. and C.B. Rieth. 2002. Northeast Subsistence-Settlement Change A.D. 700-1300. *New York State Museum Bulletin 496*, Albany, NY.

Thomas Morton, of Merry Mount, Massachusetts observed in the 1620s:

“The Salvages are accustomed to set fire of the Country in all places where they come, and to burn it twice a yeare, viz: at the Spring, and in the fall of the leafe. The reason that moves them to doe so, is because it would other wise be so overgrown with under weeds that it would be all a coppice wood, and the people would not be able in any wise to passe through the Country out of a beaten path... the burning of the grasse destroyes the underwoods, and so scorseth the elder trees that it shrinks them and hinders their growth very much: so that hee that will looke to finde large trees and good tymber must not depend upon the help of a wooden prospect to find them on the upland ground, but must seeke for them (as I and others have done) in the lower grounds, where the grounds are wett.... for the Salvages, by this custome of theirs, have spoiled all the rest: for this custome hath bee continued from the beginning... And this custome of firing the country is the meanes to make it passable; and by that means the trees growe here and, there as in our parks: and makes the Country very beautiful land commodious.” Pg. 47.

Wilbur, C. K. 1996. *The New England Indians*, Illustrated Living History Series, The Globe Pequot Press, Guilford, CT.

“We must conclude ... that the Indians of the Northeast cleared land for villages and fields, cut fuelwood and set fires beyond these clearings, exercised a wide indirect influence on vegetation through their hunting... These facts alone, however, are not very helpful in evaluating the extent and intensity of Indian influence in the Northeast or in reconstructing the history of a particular area. One needs rather full knowledge of four other factors...the duration of Indian occupation, the population density, population concentration and movements, and ...the location of all village sites.” Pg 44.

“The northeastern United States was occupied from remote times by an Indian population whose size has not been—and perhaps can never be—determined accurately. Most of this population lived in villages. These Indians created sizeable clearings for their villages and fields and probably expanded the clearings as they foraged incessantly for firewood and other necessary materials. Over much of the region, they set fire to the woods to improve traveling and visibility; to drive or enclose game; and to destroy ‘vermin.’ They probably exercised some influence on the forest through their control over the animals they hunted and through planting food and medicinal plants. It is certain that their activities destroyed the forest in some places, and it is hardly doubted that they modified it over much larger areas. Seasonal migrations and the periodic relocating of villages widened the range of Indian influence, which extended into unexpected localities and supposedly uninhabited regions.”

“We must conclude that an area which was wooded when first seen by white men was not necessarily primeval; that an area for which there is no record of cutting is not necessarily virgin; and that a knowledge of local archeology and history should be part of the ecologist s equipment.” Pg 47.

Day, G. M. 1998. *In Search of New England's Native Past: Selected Essays by Gordon M. Day*. Foster, M. K. and Cowan W. (Eds). University of Massachusetts Press, Amherst, MA.

Describing New England, the Midwest and the southeast - “Agricultural clearing and burning had converted much of the forest into successional (fallow) ground and into semi-permanent grassy openings (meadows, barrens, plains, glades, savannas, and prairies)”.

**Denevan (1992)** *The pristine Myth: The Landscape of the Americas in 1492*  
Describing New England, the Midwest and the southeast:

“the virgin forest was not encountered in the 16<sup>th</sup> and 17<sup>th</sup> Centuries; it was invented in the late eighteenth and nineteenth Centuries” *Pyne 1982* (Denevan 1992)

**Cronon. *Changes in the Land***

“The principal social and economic grouping for precolonial New England Indians was the village, a small settlement with perhaps a few hundred inhabitants [note on p. 47, uses 400 people]... villages...were the centers around which Indian interactions with the environment centered”. P. 38

“village lands were usually organized along a single watershed”. P. 59

“the crucial distinction between Indian communities was whether or not they had adopted agriculture”. P. 38

“farming Indians of southern New England”.

“Their ability to raise crops put them in a fundamentally different relationship with their environment”.

“Grain made up perhaps one-half to two-thirds of the southern New England diet, thereby reducing southern reliance on other foodstuffs; in comparison northern Indians who raised no grain at all had to obtain two to three times more food energy from hunting and fishing”.

“The crucial role of agriculture in maintaining so large an Indian population in precolonial New England is clear; although agricultural and non agricultural peoples inhabited roughly equal areas of southern and northern New England respectively, those who raised crops contributed over 80 percent of the total population”. P. 42

John Pynchon (cited by Day and by Eva Butler in 1948) calendar dates: “an indication of how much agriculture had transformed Indian lives there” (42)

“But in clearing land for planting and thus concentrating the food base, southern Indians were taking a most important step in reshaping and manipulating the ecosystem” p.48

“It is important to underscore how little we know of this early fur trade and its effect on different Indian groups at different times and ways”.

Indian lessons from Europeans “learned primarily not from men like Champlain and Gosnold but from dozens of unknown visitors who left no record of their trips”. (83)

“betokened an already, long and continuing exchange between peoples on opposite sides of the Atlantic”.

Fur trade changed Indian relations with nature “enough to turn Indians into the leading assailants of New England’s furbearing animals”. (98)

“The keeping of cattle on Indian land further decreased the forage available for wild deer herds and so continued the erosion of hunting resources”. (10x)

“Low Indian densities meant fewer hunters and for that reason larger concentration of the very animals Europeans most desired, so that the fur trade was far more active in Maine and eastern Canada than it was further south”. (104)

“The death of the beaver in fact paved the way for the non-Indian communities that would arrive soon”. (10x)

1798 Mohegan “The times are Exceedingly Altered, Yea the Times have turn’d everything upside down, or rather we have Chang’d the good Times, Chiefly by the help of the White People, for in Times past, our Fore-Fathers lived in Peace, Love and great harmony, and had everything in Great plenty...But alas, it is not so now, all our Fishing, Hunting and Fowling is entirely gone”. (107)

“Edge habitats once maintained by Indian fires tended to return to forest as Indian populations declined. But edge environments were also modified or reduced – and on a much larger scale – by clearing, an activity to which English settlers with their fixed property boundaries, devoted far more concentrated attention than had the Indians. Whether edges became forests or fields, the eventual consequences were the same to reduce – or sometimes with English livestock, to replace – the animal populations that had once inhabited them. The disappearance of deer, turkey, and other animals thus betokened not merely a new forest economy but a new forest ecology as well”. P. 108

“One must not exaggerate the differences between English and Indian agriculture...their most important crop was the same maize grown by Indians”. P. 127

1666 Samuel Maverick “it is a wonder to see the great herds of Cattle belonging to every Town...And withal to consider how many thousand Neate Beast and Hogs are yearly killed and soe have been for many years...to supply Newfoundland, Barbados, Jamaica and other places”.

“the land was already changing in response to that new understanding, creating a landscape different from the one that had been there before”.

### *Northern Indians*

Northern Indians did not engage in burning “Because they [northern Indians] did not practice agriculture and so were less tied to particular sites, they had less incentive to alter the environment at a given spot “ (50)

“Agricultural produce had been the major substance offered by southern Indians in trade with northern ones” (9x)

“The one occasion for which furs were accumulated in precolonial times – when they were exchanged with southern villages for corn and other goods” (9x)

### ***Impact of Indian Burning***

“In short, Indians who hunted game animals were not just taking the ‘unplanned bounties of nature’; in an important sense, they were harvesting a foodstuff which they had consciously been instrumental in creating”. (51)

“Indians practicing a more distant kind of husbandry of their own”.

“For New England Indians, ecological diversity, whether natural or artificial, meant abundance, stability, and a regular supply of the things that kept them alive”. (53)

When Verrazano described 25-30 leagues of treeless land in Narragansett Bay and Higginson observed thousands of treeless acres near Boston “they were observing the effects of agricultural Indians returning to fixed village sites and so consuming their forest energy supply”. P. 48.

“Selective Indian burning thus promoted the mosaic quality of New England ecosystems, creating forests in many different states of ecological succession. In particular, regular fires promoted what ecologists call the ‘edge effect’. By encouraging the growth of extensive regions which resembled the boundary areas between forests and grasslands, Indians created ideal habitats for a host of wildlife species.” (51)

“In Francis Jennings telling phrase, the land was less virgin than widowed, Indians had lived on the continent for thousands of years, and had to a significant extent modified its environment to their purposes. The destruction of Indian communities in fact brought some of the most important ecological changes which followed European’s arrival in America”. P. 12

“the New England Indians burned forests to clear land for agriculture and to improve hunting”. P. 12

“the evidence from places like Boston and Narragansett Bay that the practice could sometimes go so far as to remove the forest altogether with deleterious effects for trees and Indians themselves”. P. 13

“Indians made sure that [the effects of fire] were very wide indeed. Throughout New England fires which destroyed substantial portions of a hardwood forest created the conditions of full sunlight which species such as birch, white pine and various shrubs need in order to flourish”.

Even leads WC to speculate about fire and its role as in his interpretation of T Merton writing about riding through a forest with little or no wood growing “he was probably describing the site of an old forest fire”

Landscape - “a patchwork” p. 31

### ***Cronon Equivocation and Arguments Against Cronon***

P 181 Footnote: “But Raup was no doubt right that the entirety of southern New England was never regularly burned; I have limited the claims of my argument to the local vicinity of village sites. A recent article defends Raup but basically confirms my emphasis on local burning”. [Cites EWB Russell 1983].

Morton (p. 37) “the beasts of the forrest there doe serve to furnish them at any time when they please”. Emphasis on forest not “edge, pasture, etc.”

Francis Higginson “neither have they any settled places, as Townes to dwell in...but they change their habitation from place to place”. P. 58

Winthrop “they enclose noe land, neither have they any settled habitation”.

R Williams “they burnt up all the underwoods in the Country, once or twice a year”.

Wm Wood “The timber of the country grows straight and tall, some trees being twenty, some thirty feet high before they spread for the their branches”.

“good ground, in abundance with excellent good timber”.

### **Ethnohistoric Descriptions of Activities**

"The houses were made with long yong Sapling trees, bended and both ends stucke into the ground; they were made round, like unto an Arbour, and covered downe to the ground with thicke and well wrought matts, and the doore was not over a yard high, made of a matt to open; the chimney was a wide open hole in the top, for which they had a matt to cover it close when they pleased; one might stand and goe upright in them, in the midst of them were foure little trunches knockt into the ground, and small stickes laid over, on which they hang their Pots, and what they had to seeth; round about the fire they lay on matts, which are their beds. The houses were double matted, for as they were matted without, so they were within, with newer & fairer matts. In the houses we found wooden Bowles, Traves & Dishes, Earthen Pots, Hand baskets made of Crab shells, wrought together; also an English Paile or Bucket, it wanted a bayle, but it had two Iron eares: there was also Baskets of sundry sorts, bigger and some lesser, finer and some courser: some were curiously wrought with blacke and white in pretie workes, and sundry other of their household stuffe: we found also two or three Deeres heads, one whereof had bin newly killed, for it was still fresh; there was also a company of Deeres feete stuck up in the houses, Harts homes, and Eagles claws, and sundry such like things there was: also two or three Baskets full of parched Acornes, peeces of fish, and a peece of a broyled Hering. We found also a little silke grasse, and a little Tobacboseed, with some other seeds which wee knew not;

without was sundry bundles of Flags, and Sedge, Bull-rushes, and other stuffe to make matts ...“ (Cheever, 1848, pp. 39-40).

"They strike fire in this maner; every one carrieth about him in a purse of sewed leather, a Minerall stone (which I take to be their Copper) and with a flat Emerie stone (wherewith Glasiers cut glasse, and Cutlers glase blades) tied fast to the end of a little sticke, gently he stricketh upon the Minerall stone, and within a stroke or two, a sparke falleth upon a piece of Touchwood (much like our Spunge in England) and with the least sparke he maketh a fire presently" (Brereton, 1903, p. 10).

“In the middle of summer . . . they will flie and remove on a sudden from one part of their field to a fresh place . . . They are quicke; in a halfe a day, yea, sometimes a few houres warning to be gone and the house up elsewhere ...” Williams (1963:135 [1643]).

Hart, J. P. and C.B. Rieth. 2002. Northeast Subsistence-Settlement Change A.D. 700-1300. *New York State Museum Bulletin 496*, Albany, NY. Chapter 15.

“Their Diet is Fish and Fowl, Bear, Wildcat, Ratton and Deer; dried Oysters, Lobsters rosted or dried in the smoak, Lampres and dry'd Moose-tongues, which they esteem a dish for a Sagamor; hard egges . . . their Indian Corn and Kidney beans they boil . . . they feed likewise upon earth-nuts or ground-nuts, roots of water-Lillies, Ches-nuts, and divers sorts of Berries [emphasis in original;[ Josselyn 1988 (1674):93].” Pg. 161.

Hart, J. P.(Ed.) 1999. *Current Northeast Paleoethnobotany*. New York State Museum Bulletin 494. The University of the State of New York, Albany, NY.

### **Impacts of Contact**

“It was the nineteenth of May... when from Monahiggan I set sayle.... I passed alongst the Coast where I found some antient Plantations, not long since populous now utterly void; in other places a remnant remains, but not free of sicknesse. Their disease, the Plague, for we might perceive the sores of some that had escaped, who described the spots of such as usually die. When I arrived at my Savages [Squanto] native Country (finding all dead) I travelled alongst a daies journey Westward.” Dermer 1619

Dunn, J. P. 1993. Squanto before he met the Pilgrims. *Bulletin of the Massachusetts Archeology Society*. 54:38-53.

“But we had scarce been an hour together, but Samoset came again, and Squanto, the only native of Patuxet, where we now inhabit, who was one of the twenty captives that by Hunt were carried away, and had been in England and dwelt in Cornhill with Master John Slanie, a merchant, and could speak little English with three others;...” Page 39

Karr, R. D. 1999. *Indian New England 1534-1674. A Compendium of Eyewitness Accounts of Native American Life*. Branch Line Press, Pepperell, MA.

“The Americans, presented with the effects of European intrusion across a huge range of experiences, were developing new patterns in response to those challenges. In North America

these effects had been going on for almost a century by the time sustained colonies were founded, so most of our accounts describe people whose entire lives had been lived in the changing environment. Hundreds of fishing and trading voyages, which have left only ghostly trails, had already introduced Americans to European ways and products. By the middle of the sixteenth century several hundred ships a year went to the Newfoundland Banks for the rich summer fishing and some ventured down the New England coast. Many shipwrecked or simply jettisoned Europeans must be added to the famous Lost Colonists of Roanoke, left in 1587, so that hundreds must have joined Indian societies all along the coast... Every so often an early explorer, thinking he was in uncharted territory, was startled to see Indians wearing European shirts or hats, or using a shirt as a makeshift sail for their canoe as Archer and Brereton were in their first encounter off the Maine coast with Indians skillfully sailing "a Baske-shallop", a large sailing boat obtained from Basque fishermen in Newfoundland or Cape Breton. And imagine the response of the Pilgrims when Samoset, the first Indian they saw up close, began his speech by saying, 'Welcome'.

Kuppermann, K. O. 2000. *Indians & English, Facing Off in Early America*, Cornell University Press, Ithaca, N.Y.

"In approaching the history of English-Indian contacts in New England, we are faced with the fact that contact commenced long before significant records were made. For the casual reader, the history of New England began in 1620 with the landing of the Pilgrims on Plymouth Rock, yet he is confronted with the anomaly of Samoset's greeting, 'Welcome, Englishmen.' We may search hopefully in the relations of the voyage of 1602 (Archer 1843; Brereton 1843), but our quest for the precontact Indian is hardly satisfied by the Indians who met Captain Gosnold then at Cape Neddick, clad in European clothes and rowing 'in a Baskeshallop,' or by the Cuttyhunk natives who tossed off in English such phrases as 'How now are you so saucie with my Tabacco?'" Pg. 65.

Day, G. M. 1998. *In Search of New England's Native Past: Selected Essays by Gordon M. Day*. Foster, M. K. and Cowan W. (Eds). University of Massachusetts Press, Amherst, MA.

"This practice commenced as early as 1501 with the kidnapping of Newfoundland Indians by the Portuguese (Harrisse 1892:63), and when we read that even these Indians possessed silver discs and a sword, both of Italian origin (Harrisse 1892:73), our hope of finding northeastern Indians who were completely unaffected by European trade goods diminished.

".....but an awareness of the sixteenth century prevents us from assuming that a particular cultural trait was a native trait merely because it was observed by an explorer in the early seventeenth century."

Day, G. M. 1998. Chapter 1. The Indian as an Ecological Factor in the Northeastern Forest. Pg. 40 *In Search of New England's Native Past: Selected Essays by Gordon M. Day*. Foster, M. K. and Cowan W. (Eds). University of Massachusetts Press, Amherst, MA.

## **The Great Equivocation of Ethnohistorians**

“It seems that there is no evidence in the early authorities for the wholesale annual conflagration of southern New England which Raup found unacceptable but only burning ‘in those places where the *Indians* inhabit’ (Wood 1865)”. Pg 40.

Day, G. M. 1998. *In Search of New England's Native Past: Selected Essays by Gordon M. Day*. Foster, M. K. and Cowan W. (Eds). University of Massachusetts Press, Amherst, MA.

## **Archaeological (and Ethno) Refutation of Ethnohistoric**

1524: “They move these houses from one place to another according to the richness of the site and the season. They need only carry the straw mats, and so they have new houses made in no time at all. In each house there lives a father with a very large family, for in some we saw 25 to 30 people. They live on the same food as the other people-pulse (which they produce with more systematic cultivation than the other tribes, and when sowing they observe the influence of the moon, the rising of the Pleiades, and many other customs derived from the ancients), and otherwise on game and fish.” (Verrazano letter)

For wood there is no better in the world I think, here being four sorts of oak differing both in the leaf, timber, and color, all excellent good. There is also good ash, elm, willow, birch, beech, sassafras, juniper cypress, cedar, spruce, pines and fir that will yield abundance of turpentine, pitch, tar, masts and other materials for building both of ships and houses.

“The Indians are not able to make use of the one fourth part of the land, neither have they any settled places, as towns to dwell in, nor any ground as they challenge for their own possession, but change their habitation from place to place. “  
(Higginson, True Description)

“Towns they have none, being always removing from one place to another for conveniency of food, sometimes to those places where one sort of fish is most plentiful, other whiles where others are. I have seen half a hundred of their wigwams together in a piece of ground and they shew prettily, within a day or two, or a week they have been all dispersed. They live for the most part by the Sea-side, especially in the spring and summer quarters, in winter they are gone up into the Countrie to hunt Deer and Beaver....” (1669: Josselyn)

“For decades, it has been assumed that sometime after A.D. 1000 the inhabitants of the coast became actively involved in raising tropical cultigens, especially maize (Ritchie 1969; Salwen 1975; Smith 1950; Snow 1980). This belief has a long history, despite the relative lack of direct evidence for agriculture from coastal archaeological sites.” Pg. 114.

“researchers have reviewed the evidence for prehistoric agriculture (primarily maize) on the coast of Southern New England and New York ...consistently the most interesting question has been whether or not coastal Algonquins were raising and consuming maize in significant

quantities prior to the initial European arrival, usually placed at A.D. 1524. For now, the archaeological evidence suggests that the answer to this question is no.” Pg. 111.

“it appears that the growing of maize was a late development on the coast, and one which probably had a negligible impact on overall life ways... The limited work that has been done on reconstructing diet with carbon and nitrogen stable isotope analyses has also indicated that maize had a limited, if any, role in the prehistoric diet.” Pg. 114.

“This is not to say that maize was not grown and consumed on the coast—it surely was—only that it was probably not a central feature of the coastal economy. Quite possibly, its symbolic and social importance outweighed its dietary significance. Even after the introduction of maize, coastal societies continued to exploit a broad range of resources, as they had done for thousands of years.” Pg. 114.

“Late Woodland food production was a very minor part of a subsistence strategy best described as a broad-based hunting and gathering subsistence system emphasizing marine and estuary resources ...There certainly is no evidence in the archaeological record of the kind of reliance upon horticulture recorded by early European explorers and colonists,....” Pg. 134.

Hart, J. P.(Ed.) 1999. *Current Northeast Paleoethnobotany*. New York State Museum Bulletin 494. The University of the State of New York, Albany, NY.

Of all the faunal remains present in archaeological sites of Connecticut, the most ubiquitous is *Odocoileus virginianus* or white-tailed deer.” Pg. 138.

“Seventeenth-century accounts of the native New England diet belie claims of maize specialization, and it is likely that the hunting and gathering of a variety of plants and animals formed the core of the diet of aboriginal peoples.” Pg. 161.

“There is little evidence for settled village life in the interior of New England, prior to European contact.” Pg. 163.

“The relative invisibility of Late Woodland villages in New England may also be due to a high degree of mobility for the small groups that reside in the region (Ritchie 1958:108). Pg. 163.

“While settlement pattern data are not plentiful in New England, especially in the interior, it is clear that the large, semi-permanent settlements characteristic of the Late Woodland period elsewhere in the deciduous Woodlands are lacking.” Pg. 163.

Hart, J. P.(Ed.) 1999. *Current Northeast Paleoethnobotany*. New York State Museum Bulletin 494. The University of the State of New York, Albany, NY.

Holder and Goland 1997 “Why besides externally imposed necessity would foragers give up a secure and comfortable means of production for the uncertainty and drudgery of agriculture?”.

**Chilton 2010** “no evidence for year-round farming villages in New England”...“no evidence for intensive maize horticulture until after European colonization”

**Strong 1997** “Corn, beans and maize, the three sisters so important to the Iroquois, never made much of an impact on Long Island until after the European settlement destroyed the rich sources of natural foods, medicines and supplies”

“Natives made such efficient use of the environment that there was no rush to change from the old ways when plant domestication was introduced”

*Demeritt 1991* “For the most part, it would seem prehistoric peoples chose clams over corn”

### **Ethnohistory on Practics**

“Moshup, their legendary whalesman, was kind to them by sending whales etc. ashore for them to eat” *Bassette 1792* (MV) In Little and Andrews 2010.

“Moshup went away nobody knows whither. He had no conversation with the Indians, but was kind to them, by sending whales &c. ashore to them to eat”.

From *Fabulous Traditions and Customs of the Indians of Martha’s Vineyard*, communicated to Benjamin Basset of Chilmark, by Thomas Cooper, a half blooded Indian, of Gay Head, aged about sixty years; and which, he says, he obtained of his grandmother, who, to use his own expression, was a stout girl, when the English came to the island. 1792 Mass Hist. Society.

“They change their habitations from place to place as circumstances of situation and season may require, and this is easily done, as they have only to take with them their mats and they have other houses prepared at once” *Verrazano 1524*

their houses ”made with small poles like an arbor covered with mats and their fire in the midst, over which they leave a place for smoke to get out of”.

*Guernsey* quoting young Mayhew in 1650

### **Ethnohistory Supporting Maize, Villages, Fire**

“All along the shore there is a great deal of land cleared up and planted with Indian corn. The country is very fine and agreeable, and there is no lack of fine trees.”

(1604 – *De Champlain* in Russell)

1605: “Along the New England coast in 1605, Champlain noted “several fields entirely uncultivated, the land being allowed to remain fallow.”

( *Voyages of Samuel de Champlain*, New York, W.L. Grant, 1907; (Doolittle 2004))

1616: “And surely by reason of those sandy cliffs and cliffs of rocks, both which we saw so planted with Gardens and Corn fields, and so well inhabited with a goodly, strong and well proportioned people, besides the greatness of the Timber growing on them.....” (John Smith, *A Description of New England*, in Mulford, 171)

1622: “...New England is a part of America...From 43. to 45. the coast is mountainous, rockie, barren, and broken Iles that make many good harbours. The water is deepe, close to the shore; there are many riuers and fresh springs: few Saluages, but an incredible abundance of fish, fowle, wilde fruits, and good timber. From 43. to 41. and a half, an excellent mixed coast of stone, sand and clay, much corne, many people, some Iles, many good harbours, a temperate aire, and theirin all things necessary for the building [of] ships of any proportion, and good merchandize for their fraught: within a square of 12 leagues, 25 harbours I sounded; 30 seuerall Lordships I saw, and so neare as I could imagine, 3000 men.”

(J. Smith, *New Englands Trials*, 253, from *Mayflower History CD*)

1630s: “The savages are accustomed to set fire in all places where they come; and to burne it, twize a year, vixe at the Spring, and the fall of the leafe. The reason that moves them to do so, is because it would otherwise be so overgrown with underweedes that it would be all a coppice wood, and the people would not be able in any wise to passe through the Country out of a beaten path... The burning of the grasse destroys the underwoods, and so scorseth the elder trees, that it shrinkes them, and hinders their growth very much: So that hee that will look to finde large trees, and good tymber, must not depend upon the help, of a wooden prospect to finde them on the upland ground; but must seek for them, (as I and others have done) in the lower grounds where the grounds are wett when the Country is fired... For when the fire is once kindled it dilates and spreads itself against as with the winds; burning continually night and day until a shower of rain falls to quench it. And this custom of firing the country is the meanes to make it passable, and by that meanes the trees growe here, and there as in our parkes.”  
(Thomas Morton in Day, 1953; Pyne, 1982; Dunwiddie & Adams, 1994, Motzkin and Foster 2003).

1620: “So soon as it was light they traveled again, passing by many lakes and brooks and woods, and in one place where the savages had burnt the space of five miles in length, which is a fine champaign country, and even.” (*Mourt’s Relation*, Heath, 46)

1620: “Tisquantum was a guide, taking the Pilgrim ambassadors to various locations, and helping them establish trading relations. He also taught the Pilgrims how to better utilize the natural resources: how to catch eels, and how to plant corn using fish caught from the town brook as fertilizer.” (C. Johnson, *Mayflower History*)

1621: “Afterwards they (as many as were able) began to plant their corn, in which service Squanto stood them in great stead, showing them both the manner how to set it, and after how to dress and tend it. Also he told them, except they got fish and set with it in these old grounds it would come to nothing. And he showed them in the middle of April they should have store enough come up the brook by which they began to build, and taught them how to take it, and where to get other provisions necessary for them. All which they found true by trial and experience. Some English seed they sowed, as wheat and pease, but it came not to good, either by the badness of the seed or lateness of the season or both, or some other defect.” (Bradford, in Miller, 60)

1621: For all the country be as it were a thick wood in general, yet in divers places there is much ground cleared by the Indians, as especially about the plantation. I am told that about three miles from us a man may stand on a little hilly place and see divers thousands of acres of ground as good as need to be, and not a tree in the same. It is thought here is good clay to make bricks and tiles and earthen pots as needs to be.

For wood there is no better in the world I think, here being four sorts of oak differing both in the leaf, timber, and color, all excellent good. There is also good ash, elm, willow, birch, beech, sassafras, juniper cypress, cedar, spruce, pines and fir that will yield abundance of turpentine, pitch, tar, masts and other materials for building both of ships and houses.

The Indians are not able to make use of the one fourth part of the land, neither have they any settled places, as towns to dwell in, nor any ground as they challenge for their own possession, but change their habitation from place to place. (Higginson, True Description)

1620: “we came to a conclusion, by most voices, to set on the mainland, on the first place, in a high ground, where there is a great deal of land cleared, and hath been planted with corn three or four years ago....Our greatest labor will be fetching of our wood, which is half a quarter of an English mile, but there is enough so far off.” (*Mourt’s Relation*, Heath, 41)

The natives there [South Windsor] plant maize, and in the year 1614 they had a village resembling a fort for protection against the attacks of their enemies. ... The river is not navigable with yachts for more than two leagues farther, as it is very shallow and has a rocky bottom. ... This river has always a downward current so that no assistance is derived from it in going up, but a favorable wind is necessary.”  
(Adriaen Block, in <http://www.colonialwarsct.org/1614.htm>)

### **Quotes from Explorers and Colonists Emphasizing Wild Wooded Nature**

“...remote, rocky, barren, bushy wild-woody wilderness, a receptacle for Lions, Wolves, Bears, Foxes, Rockoons, Bays, Bevers, Otters and all kinds of wild creatures.....a place that never afforded the Natives better then [sic] the flesh of a few creatures and parched Indian corn inch’t out with Chestnuts and bitter Acorns”

*Edward Johnson 1656* Where?

“We espied land which we deemed to be Cape Cod....wooded to the brink of the sea.” (1620 - *Mourt’s Relation*, Heath, 15)

1603: “The land somewhat lowe, full of goodly woods, but in some places plaine.” (Berereton, in Quinn, Cape Cod – Barnstable Harbor).

1620: “There they (Indians) took into another wood, and we after them, supposing to find some of their dwellings, but we marched through boughs and bushes, and under hills and valleys, which tore our very armor in pieces, and yet could meet with none of them.....about ten o’clock we came into a deep valley, full of brush, wood-gaille, and long grass, through which we found little paths or tracks, and there we saw a deer, and found springs of fresh water....and drunk of our first New England water with as much delight as we ever drunk water in our lives.” (*Mourt’s Relation*, Heath, 20-21)

1620: “When we had marched five or six miles into the woods and could find no signs of any people, we returned again another way, and as we came to the plain ground we found a place like a grave...” (*Mourt’s Relation*, Heath, 27)

1620: “Besides, what could they see but a hideous and desolate wilderness, full of wild beasts and wild men.....the whole country, full of woods and thickets, represented a wild and savage hue.” (Bradford, in Mulford, 228)

1620: “a good harbor and pleasant bay, circled round, except in the entrance ... compassed about to the very sea with oaks, pines, juniper, sassafras, and other sweet wood.” (*Mourt’s Relation*, Heath, 16)

1620: Long Point, Provincetown – “On this side where we lay is the bay, and the further side the sea; the ground or earth, sand hills much like the downs in Holland, but much better; the crust of the earth a spits depth, all wooded with oaks, pines, sassafras, juniper, birch, holly, vines, some ash, walnut; the wood for the most part open and without underwood, fit either to go or ride in.’ (Bradford & Winslow in McCaffrey, 1973; Whitney, 1994 in Motzkin and Foster 2002). (*Mourt’s Relation*, Heath, 21)

1620: “We marched along the coast in the woods some seven or eight miles, but saw not an Indian nor an Indian house; only we found where formerly had been some inhabitants, and where they had planted their corn.....The land for the crust of the earth is, a spit’s depth, excellent black mould, and fat in some places, two or three great oaks but not very thick, pines, walnuts, beech, ash, birch, hazel, holly, asp, sassafras in abundance, and vines everywhere, cherry trees, plum trees, and many others which we know not.” (*Mourt’s Relation*, Heath, 39)

1600 – 1850: “There was enough timber in Wellfleet to support a ship-building industry until the middle of that (19<sup>th</sup>) century.” (Schneider, 150)

1602: “On the outsides of this Island are many plaine places of grasse, abundance of Strawberies & other berries before mentioned.....the soile is fat and lustie, the vpper crust of gray colour; but a foot or lesse in depth, of the colour of our hempelands in England; and being thus apt for these and the like graines.....This Island is full of high-timbred Oakes, their leaues thrise so broad as our; Cedars, straight and tall; Beech, Elme, hollie, Walnut trees in abundance, the fruit as bigge as ours, as appeared by those we found vnder the trees. Which had lien all the yeere ungathered; Haslenut trees, Cherry trees, the leafe, barke and bignesse not differing from ours in England, but the stalke beareth the blossoms or fruit at the end thereof, like a cluster of Grapes, forty or fifty in a bunch; Sassafras trees great plentie all the Island ouer, a tree of high price and profit; also diuers other fruit trees, some of them with strange barkes, of an Orange colour, in feeling soft and smoothe like Veluet: in the thickest parts of these woods, you may see a furlong or more round about. On the Northwest side of this Island, neere to the sea side, is a standing Lake of fresh water, almost three English miles in compasse, in the middest whereof stands a plot of woody ground, an acre in quantitie or not aboue: this Lake is full of small Tortosies.....” (Brereton, in Quinn, 151-152)

“The first Englishman who settled at Nantucket was Thomas Macy....they found the land covered with wood.” (Freeman, Notes on Nantucket, 134, 135)

1600s: “The wood question was confined to Coatue, and orders and decrees were frequent about “sedars and pines.” Whatever wood there may have been on this point, no saw mill was ever established on the island in early times” (Worth, 194)

1670: “Wherever the English went the trees disappeared. Nantucket was already importing logs by the 1670s, having run through the “rich forests of oak and pine” of early reports.” (Schneider, “rich forest” quote anon., 149)

1620: “The passengers of the Mayflower were happy to see “so goodly a land, and wooded to the brink of the seas,” and named the final curl of the Cape “Wood End,” presumably because the forest ended there.” (Schneider, 148-9, quoting *Mourt’s Relation*)

1843: “The strata of peat found in them (the swamps) is from one foot to six or more in depth.... In many of the swamps the Peat is from six to eight feet in depth, a hard bottom of sand is below the peat on which is found many large stumps and roots of trees and some parts of them are burnt to charcoal, so that it is beyond a doubt that fire consumed the trees. Which leads many to conclude that when the island was first settled by the English & being covered with woods, there was not clear land sufficient for the wants of the people to cultivate....” etc. so they burned it off.

“I think from the foregoing circumstances we may infer that the Island was covered with woods, and that they were set on fire as above mentioned. My ancestors have often told me that from the best information they could obtain the Island originally was covered with Woods.” (Obed Macy in Jones)

1797: “The protecting hand of Nature has reserved this favourite spot to herself. Its fertility and its production are exactly the same as in Gosnold’s time, excepting the wood, of which there is none...The whole island of Cuttyhunk has been for many years stripped of its wood.” (Belknap papers in Massachusetts Historical Society, in Quinn, *Disputed Points*, 504-505)

1603: “Their Boats.....made of the Barke of a Birch-Tree....Their Oares....made of Ash or Maple very light and strong.” (Pring, in Quinn, 222-223)

1620: “found (Clark’s Island, Plymouth Harbor) about a mile and a half or two miles about, all wooded....so full of wood as we could hardly clear so much as to serve us for corn.” (*Mourt’s Relation*, Heath, 40)

For wood there is no better in the world I think, here being four sorts of oak differing both in the leaf, timber, and color, all excellent good. There is also good ash, elm, willow, birch, beech, sassafras, juniper cypress, cedar, spruce, pines and fir that will yield abundance of turpentine, pitch, tar, masts and other materials for building both of ships and houses.

1634: “The next commodity the land affords is good store of woods, and that not only such as may be needful for fuel but likewise for the building of ships and houses and mills and all manner of water-work about which wood is needful. The timber of the country grows straight and tall, some trees being twenty, thirty foot high, before they spread forth their branches; generally the trees be not very thick, though there may be many that will serve for mill posts, some being three foot and a half over. And whereas it is generally conceived that the woods grow so thick that there is no more clear ground than is hewed out by labor of man, it is nothing

so, in many places diverse acres being clear so that one may ride a hunting in most places of the land if he will venture himself for being lost. There is no underwood saving in swamps and low grounds that are wet, in which the English get osiers and hasles and such small wood as is for their use. Of these swamps, some be ten, some twenty, some thirty miles long, being preserved by the wetness of the soil wherein they grow; for it being the custom of the Indians to burn the wood in November when the grass is withered and the leaves dried, it consumes all the underwood and rubbish which otherwise would overgrow the country, making it impassable, and spoil their much affected hunting; so that by this means in those places where the Indians inhabit these is scarce a bush or bramble or any cumbersome underwood to be seen in the more champion ground. Small wood, growing in these places where the fire could not come, is preserved. In some places, where the Indians died of the plague some fourteen years ago, is much underwood, as in the midway between Wessagusset and Plymouth, because it hath not been burned. Certain rivers stopping the fire from coming to clear that place of the country hath made it unuseful and troublesome to travel through, insomuch that it is called ragged plain because it tears and rents the clothes of them that pass.” (Wood, New England’s Prospect, 38)

1634: “The fir and pine be trees that grow in many places, shooting up exceedingly high, especially the pine. They do afford good masts, good board, rosin, and turpentine. Out of these pines is gotten the candlewood that is so much spoken of.....Here no doubt might be good done with sawmills, for I have seen of these stately high-grown trees ten miles together close by the river side.....” (Wood, New England’s Prospect, 40)

1634: “Another work is their (Indian women) planting of corn...keeping it so clear with their clamshell hoes as if it were a garden rather than a corn foed.” (Wood, New England’s Prospect, 113)

1635: “This year, on Saturday, the fifteenth day of August, was such a mighty storm of wind and rain, as none now living in these parts, either English or Indian, had seen the like; being like unto those hurricanes, or tuffins, that writers mention to be in the Indies. It began the morning a little before day, and grew not by degrees, but came with great violence in the beginning, to the great amazement of many. It blew down sundry houses, and uncovered divers others; divers vessels were lost at sea in it, and many more in extreme danger. It caused the sea to swell in some places to the southward of Plymouth, as that it arose to twenty foot right up and down, and made many of the Indians to climb into trees for their safety. It threw down all the corn to the ground, which never rose more, the which, through the mercy of God, it being near the harvest time, was not lost, though much the worse; and had the wind continued without shifting; in likelihood it would have drowned some part of the country. It blew down many hundred thousands of trees, turning up the stronger by the roots, and breaking the high pine trees, and such like, in the midst, and the tall young oaks, and walnut trees, of good bigness, were wound as a with by it, very strange and fearful to behold. It began in the south-east, and veered sundry ways, but the greatest force of it, at Plymouth, was from the former quarter; it continued not in extremity above five or six hours before the violence of it began to abate; the marks of it will remain this many years, in those parts where it was so rest. The moon suffered a great eclipse two nights after it.” (Morton, N.E. Memorial, Mayflower History CD)

1524: “We weighed anchor, and sailed eastward since the land veered in that direction [*along the south shore of Long Island*], and covered 80 leagues, always keeping in sight of land. We discovered a triangular-shaped island, ten leagues from the mainland, similar in size to the island of Rhodes [*likely Block Island* ]; it was full of hills, covered in trees, and highly populated to judge by the fires we saw burning continually along the shore. We baptized it in the name of your illustrious mother, but did not anchor there because the weather was unfavorable.” (Verrazano letter)

1524: “We frequently went five to six leagues into the interior, and found it as pleasant as I can possibly describe, and suitable for every kind of cultivation-grain, wine, or oil. For there the fields extend for 25 to 30 leagues; they are open and free of any obstacles or trees, and so fertile that any kind of seed would produce excellent crops. Then we entered the forests, which could be penetrated even by a large army; the trees there are oaks, cypresses, and others unknown in our Europe. We found Lucullian apples, plums, and filberts, and many kinds of fruit different from ours. There is an enormous number of animals-stags, deer, lynx, and other species; these people, like the others, capture them with snares and bows, which are their principal weapons.” (Verrazano letter)

There is much good timber, both oak, walnut tree, fir, beech, and exceedingly great chestnut trees. The country is both champaign and hilly, like many places in England. In some places it is very rocky ground and in it. And though the country be wild and overgrown with woods, yet the trees stand not thick, but a man may well ride a horse amongst them.” (*Mourt’s Relation*, Heath, 64)

New England was forest-clad, including the islands in the bays, the only exceptions to this condition being the salt-marshes, bogs, and the higher ranges of mountains. The Indian tribes found here by the early planters had not materially modified the natural vegetation, although the latter have reported that there was much ground cleared by them. “But, whatever may have been the amount of their planting, if the aborigines had simply abandoned the country, no mark of their occupation would long have remained, so far as the vegetable kingdom is concerned.”

**A. Gray**, *Memorial History of Boston*, vol. 1., p. 18. from *Evolution of Horticulture in New England*.

### **Elizabeth Islands**

1602: “On the North side neere adjoyning vnto the Iland Elizabeth, is an Ilet in compasse halfe a myle full of Cedars, by me called Hills Hap.” (Archer account of Gosnold, in Quinn, 126)  
NOTE Islet was Peniskese.

1602: “....altogether vnpeopled and disinhabited. It is ouer-growne with Wood and Rubbish, viz. Okes, Ashes, Beech, Wal-nut, Weech-hasle, Sassafrage, and Cedars, with diuers other of vnknowne names. The Rubbish is wild Peaze, young Sassafrage, Cherie trees, Vines, Eglentine, Gooseberie bushes, Hawthorne, Honisuckles, with others of like qualitie. The herbs and Roots are Strawberies, Raspis, Ground Nuts, Alexander, Surrin, Tansie, &c. without count. Touched the fertilitie of the soyle by our owne experience made, we found it to be excellent for

sowing...In this Iland is a stage or Pond of fresh water, in circuit two miles, on the one side not distant from the Sea thirtie yards, in the Centre whereof is a Rockie Islet, contayning neere an Acre ground full of wood.” (Archer account of Gosnold, in Quinn, 128)

1602: footnote #5: “The Peniskese expedition was primarily to cut cedar and collect sassafras. Since deforestation the island has almost certainly become much smaller.” (Quinn, 130)

1901: A. Hollack reported “some quite extensive clumps of stunted trees, which are mostly massed in the depressions and on the sheltered slopes of the northeast portion.” The vegetation was more abundant than on Pasque Island and similar to that of Naushon “except for the greater relative abundance of oaks as compared with beeches.” On Cuttyhunk he noted that while there were no living trees left there was plenty of evidence of previous deforestation: “near the western end, on the south shore is a depression once occupied by a swamp, one edge of which is exposed by the breaking away of the bluff. In the bottom of this depression may be seen numerous large stumps and logs, buried in a peat-like mass of fine vegetable debris, and subsequent examination showed these to be oak and beech.” (“Disputed Points,” Quinn, 508)

1797: “The protecting hand of Nature has reserved this favourite spot to herself. Its fertility and its production are exactly the same as in Gosnold’s time, excepting the wood, of which there is none. Every species of which he calls ‘Rubbish,’ with strawberries, pease, tansy, and other fruits and herbs, appear in rich abundance....The whole island of Cuttyhunk has been for many years stripped of its wood, I was informed by Mr Greenhill, and old resident farmer, that the trees which formerly grew on it, were such as are described in Gosnold’s Journal.” (Belknap papers in Massachusetts Historical Society, in Quinn, Disputed Points, 504-505)

In one field is a great hill, on which we point to make a platform and plant our ordnance, which will command all round about . . . The land for the crust of the earth is, a spit’s depth, excellent black mould, and fat in some places: two or three great oaks, but not very thick pines, walnuts, beech, ash, birch, hazel, holly, asp, sassafras in abundance, and vines every where, cherry trees, plum trees, and many others which we know not. Many kinds of herbs we found here in winter, as strawberry leaves innumerable, sorrel, yarrow, carvel, brooklime, liverwort, water cresses, great store of leeks and onions, and an excellent strong kind of flax and hemp. Here is sand, gravel, and excellent clay, no better in the world, excellent for pots, and will wash like soap, and great store of stone.” Young’s *Chronicles of the Pilgrims*, p. 133, from Slade 1895, from Evolution of Horticulture in New England

## Directions for Future Research

“I have always translated this as a need for larger scale regional studies which, by virtue of their wider scope, can detect and assess the full range of strategies heretofore overlooked in the archaeological record. Conversely, Feder (pers. Comm.. 1997) has speculated, ‘Actually, what we need are more small-scale studies, i.e., we should be looking at smaller scales to identify the settlement-subsistence systems within subregions and then compare them to other subregions ... What we need is more communication among those working in these different subregions.’ Either of these approaches will provide better resolution in archaeological investigations of subregional settlement and subsistence systems despite the time and resource problems inherent

in implementing large-scale projects and difficulties in improving communications between those engaged in smaller-scale projects.” *Pg. 134.*

“In fact, instead of looking for evidence to support models, I suggest that archaeologists in New England adopt a more scientific, hypothesis-testing approach. I suggest that the most reasonable hypothesis at present is that maize was only one part of a diverse subsistence-settlement system of the New England interior. Evidence that could be used to test, and potentially refute, this hypothesis includes, but is not limited to, the following: (1) evidence for year-round villages, (2) stable isotope analysis of human remains indicating a heavy reliance on maize, and (3) osteological analysis indicating a significant change in diet and living conditions associated with intensive maize horticulture.” *Pg. 171.*

Hart, J. P.(Ed.) 1999. *Current Northeast Paleoethnobotany*. New York State Museum Bulletin 494. The University of the State of New York, Albany, NY.