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Penobscot Nation

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Photograph of the islands along the Penobscot River above Old Town. In her 1941 book, *Indian Place Names*, Maine folklorist and historian Fanny Hardy Eckstorm examined the meanings behind the Native names for these islands, many of which reflected a former Native use of fire. One of these, known today as Gordon Island near Howland, was once known as *Mee-sco-dow-hok*, or “Burnt Land Island.” Photograph courtesy of James Eric Francis, Sr.

BURNT HARVEST: PENOBSCOT PEOPLE AND FIRE

BY JAMES ERIC FRANCIS, SR.

The scientific and ethnographic record confirms the fact that in southern New England, Indians used fire as a forest management tool, to facilitate travel and hunting, encourage useful grasses and berries, and to clear land for agriculture. Scholars have long suggested that agricultural practices, and hence these uses of fire, ended at the Saco or Kennebec, with Native people east of this divide less likely to systematically burn their forests. This article argues that Native people on the Penobscot River used fire, albeit in more limited ways, to transform the forest and create a natural environment more conducive to their economy. Evidence from oral traditions, place-names, travel accounts, and personal recollections challenges the idea that both agriculture and forest-burning was exclusive to southern New England. James Eric Francis, Sr. is a M.A. candidate in history at the University of Maine and is currently the Penobscot Nation Tribal Historian.

Fire is, in all the Indian tribes that I have known, an emblem of happiness or of good fortune. It is kindled before all their deliberation.

-Father Pierre DeSmet, 1857¹

According to many myths, we became truly human only when we acquired fire.

-Stephen J. Pyne, 2001²

CULTURES ACROSS the world possess myths and legends that deal with the origin of fire, suggesting its importance in all human societies. The Penobscot Indians are no exception. Historically legends were passed along orally as stories, and later these stories were written down. Because of the nature of this oral tradition, stories sometimes took on many versions. The legend presented here suggests a great need for fire and the difficulty of obtaining it. Once the Penobscot people had obtained fire, they could use it in all aspects of life.

The Creator gave the world fire. The care of fire was entrusted to two old women and one young one. They lived in a cave and guarded the fire jealously. People were denied heat and everyone was cold. The situation became so bad that the people had a meeting. The Elders asked the people to find fire and bring it back. Everyone knew that this endeavor was dangerous, with little chance of success, and so no one volunteered.

Meanwhile the red fox listened to what was said. Fox crept up to a small boy sitting on the edge of the council circle and prompted him to accept the job. The Elders inquired how he would do such a thing, and the boy said he did not know. The Elders were skeptical but agreed to let him go.

Fox instructed him to get a pair of snowshoes and to take nothing else. The boy was then told that he must run as fast as he could until he reached the cave. After some time the boy began to tire and slow down. Immediately Fox nipped at his heels and ankles. The boy got angry and pursued Fox, who ran ahead of him. This nip and chase continued each time the boy slowed. At last the boy could go no farther and sank down in the snow. This time Fox did not bite him but approached carrying three twigs in his mouth.

Fox indicated that they were near the cave of the three women who guarded the fire. Fox told the boy, "take these twigs and go into the cave. You must ask for food and shelter. The older ones will refuse, but make eyes at the younger one; she may persuade the others. Once in, offer to watch the fire, and run for your life. If you fail you will be killed."

The boy did as he was told. Exhausted and sweating from the run and bloodied by Fox, he made a pitiable sight. As predicted the older ones refused. The boy looked longingly at the younger one, who felt sorry for him. She convinced the older ones, and finally they consented to let him in.

Each night the sisters would take turns watching the fire while the others slept. First the oldest watched, then the middle sister, and then shortly before dawn it was the youngest sister's turn.

The boy, with a stomach full of food, tired from the long run, and lulled by the warmth of the fire, waged a desperate battle to stay awake. When the youngest sister was called to the fire ring, the boy offered to watch the fire for her. After some time, she agreed.

As soon as she was asleep, the boy lighted his twigs and then stamped out the fire. This awoke the sisters. The boy ran with the three women in pursuit. The women were unused to the cold and exertion. They began falling one by one; each perished. The boy kept running. The twigs were

burning very short. The boy then collapsed from exertion, sinking down in the snow. Immediately Fox appeared, snatched up the last remaining ember in his mouth, and rushed back to the people. In this manner the Indians gained their most treasured possession — fire.

-Penobscot Fire Creation Legend as remembered by the Author³

There is a distinction between fire used for cooking and keeping warm and fire used for shaping the land. Many historians, ecologists, geographers, and foresters have examined Native American fire use in the northeastern United States, and with the exception of Hugh Raup (1937) and Emily Russell (1983), most concluded that the Indians of the Northeast used fire as a tool for cooking, clearing for agriculture, hunting, facilitating travel through the forest, and other purposes in their everyday lives.⁴ There is much evidence that Native Americans in New England regularly burned the landscape at the time of European contact. Shepard Krech III, who devotes an entire chapter in his *Ecological Indian: Myth and History* to fire, wrote that “on arrival, Europeans would find thick clouds of hazy smoke enveloping the land, grasslands reduced to charred stubble, and park-like forests clear of undergrowth. Fire had clearly modified this landscape, and sometimes scarred it deeply — not lightning-caused fire (although some was), but fire ignited by Indians.” Krech asserts that deliberate and repeated burning made the Native Americans an integral part of the ecosystem and concludes that “despite European images of an untouched Eden, this nature was cultural, not virgin, anthropogenic not primeval, and nowhere is this more evident than in the Indian uses of fire.” Likewise, William Cronon, in his *Changes in the Land: Indians, Colonists, and the Ecology of New England*, states that “selective Indian burning . . . promoted the mosaic quality of New England ecosystems, creating forest in many different states of ecological succession.”⁵ According to Krech and Cronon, Native Americans used the technology of fire to shape the environment for their benefit.

To what extent did this practice extend? There is evidence that Native Americans were burning in southern New England, but how far north did this charred boundary stretch? To answer this question we must first determine why Native Americans in southern New England were burning, and which parts of the environment they burned.

According to Cronon and others, Native Americans in southern New England burned to facilitate travel through the forest. Cronon quotes William Wood: “[fire] consumes all the underwood and rubbish which otherwise would overgrow the country, making it impassable, and spoil

their much affected hunting.” In addition to ease of travel, which created better hunting conditions, the fires themselves encouraged pioneer growth that attracted the animals being hunted. “Indian burning promoted the increase of exactly those species whose abundance so impressed English colonists: elk, deer, beaver, hare, porcupine, turkey, quail, ruffed grouse, and so on.” Raspberry and other native berries also benefitted from the rich fertile soil the flames left in their wake, and Native Americans gathered these plants to supplement their diets. New England Native Americans also burned areas to clear land for agriculture. “Clearing fields was relatively easy. By setting fire to wood piled around the base of standing trees, Indian women destroyed the bark and so killed the trees; the women could then plant corn amid the leafless skeletons that were left.” Native Americans in southern New England maintained a tradition of “Indian Agriculture,” and burned large areas to support their gardens. Settlers recognized this purpose readily, for they practiced a similar technique in Europe.⁶

In southern New England, Native Americans were burning extensively and frequently for travel, hunting, gathering food, and agriculture. On the surface, this practice would appear devastating to the environment, but the fires were controlled, and rarely burned out of control. They tended to be ground fires rather than crown fires, and in fact, the act of burning away the underbrush twice a year kept that fuel from accumulating and causing larger fires. With limited fuel, Indian fires rarely reached the canopy. When Europeans arrived, the southern New England forest environment abounded with hardwoods; while hardwoods were a key natural feature of these temperate forests, their predominance was also due to repeated burnings, which destroyed fire-sensitive species, particularly conifers like the pines and cedars.

Most studies of Native American fire use argue that forest-burning was practiced primarily by southern New England tribes. In northern New England, where the forest was labeled as “primeval,” most researchers believe forest burning to be far less a factor in the lives of the aboriginal people. European explorers used the term “primeval,” meaning untouched, in contrast to the appearance of the southern New England landscape. In part, this reflected the boreal nature of the forests, but it also suggested less management by the northern New England people. “Northern Indians did not appear to have engaged in ... burnings,” Cronon concludes. He explains:

Because they did not practice agriculture and so were less tied to particular sites, they had less incentive to alter the environment of

a given spot. Their chief mode of transportation was the canoe, so that they had less need of an open forest for traveling. Moreover, many of the northern tree species were not well adapted to repeated burning, and northern forests tended to accumulate enough fuel at ground level that, once a fire got started, it usually reached the canopy and burned out of control.⁷

Cronon's assumptions are convincing. The environment in northern New England is less conducive to large-scale fires. Also, the network of rivers, lakes, streams, and ponds made the canoe the obvious choice for travel. However, his conclusions about the extent to which agriculture was practiced are debatable.

In many archaeological digs in the region, burned rocks appear along with other artifacts. These "fire stones" once lined the cooking pits that fed the indigenous people of Maine. The use of fire to cook food is assumed in cultures around the world, and here in Maine there is evidence of cooking fires in the form of ringed stones in the ground. These digs also reveal that fire had been part of food preparation techniques for thousands of years. This, of course, is not the same as using fire as a forest-management tool: how, then, do we prove other uses of fire? While the evidence is not as conclusive as it is for southern New England, it appears in the form of Indian place names in Maine and in the strong possibility that Indians throughout Maine practiced agriculture. Combined with historical descriptions of the landscape and certain scientific data, this paints a picture of conflagration in early Maine.

Indian place names are a rich tradition that still remains on the landscape. Today we take for granted many of the names of rivers, lakes, towns, and counties, but to study the meanings of these names reveals another world entirely. Penobscots historically named places in a few distinct ways. They used geographic and geologic descriptions as travel markers. Passadumkeag means "above the gravel bar," and the word Penobscot, describing the falls in Old Town, is translated as "at the descending rock." They also named places for a specific activity or resource. Stockton Springs was known as Es'sick, or "clam place."⁸ When taken collectively, the place names provide a window into the past — a lens into how Penobscot ancestors saw and used the landscape. Evidence of fire in place names appeared in a few principal sources: Henry David Thoreau's *The Maine Woods*; Fanny Hardy Eckstorm's *Indian Place Names*; and Lucius L. Hubbard's *Woods and Lakes of Maine*.

Thoreau visited Maine in 1846, 1853, and 1857, and is considered

Maine's first tourist. Like Lucius Hubbard, who traveled through the north woods in 1881, Thoreau hired Indian guides to navigate the landscape, and it was through these guides that he learned about the Indian language:

The Indian stood nearer to wild nature than we. The wildest and noblest quadrupeds, even the largest fresh-water fishes, some of the wildest and noblest birds and the fairest flowers have actually receded as we advanced, and we have but the most distant knowledge of them. . . . It was new light when my guide gave me Indian names for things for which I had only scientific ones before. In proportion as I understood the language, I saw them from a new point of view.

A dictionary of the Indian language reveals another and wholly new life to us. . . . It reveals to me a life within a life, or rather a life without a life, as it were, treading the woods between our towns still, and yet we can never tread in its trail. The Indian's earthly life was as far off from us as heaven is.⁹

In Thoreau, there are many indications of fire on the landscape. In an area near Millinocket Lake he wrote of a "Burnt Land, where fire had raged formerly." He found many other places that had previously been burnt. While some burnt-over areas might have resulted from fires set by loggers, other areas had been incorporated into the Native place-name lexicon, suggesting fires of a more ancient origin. Joseph Attean and Joe Polis, the Indians who accompanied Thoreau on two of his journeys, gave the traveler Indian place-names signifying fire: "*Paytaytequick*, or Burnt-ground Stream"; and "*Paytaywecongamec*, or Burnt-Ground Lake."¹⁰

Unlike Thoreau's generalized descriptions, Eckstorm's book focused specifically on place names. In her research she used several sources, including her knowledge of Indian languages and dialects. The book followed a metaphorical geographical trail up the Penobscot River. At Marsh Island in Old Town, she found the first evidence of fire in a place name: Pem-skud'-ek, which is from the word pem-, meaning "extended"; skut which means "fire." Pem-skud'-ek was the name of a farm on Marsh Island that was extensively burned over for agriculture and probably recalled an earlier use of fire in the area. Eckstorm noted other place names that involved fire around Old Town: *edji'dawaskod'ek*, or "grassy place cleared by fire"; and *waskodek*, or a "grassy burned place"

— that is, a farm. Venturing further north, Eckstorm's account examined the islands that dot the Penobscot River above Old Town. One of these, known today as Gordon Island near Howland, was once known as *Mee-sco-dow-hok*, or "Burnt Land Island."¹¹ She also noted in the Calais and Machias areas other evidence. *Skudek* meant "at the burned place." As Eckstorm wrote,

an opening in the forest in old times was usually the result of a fire; hence clearings, camp-grounds, and farms were often named *skudek* or *pemskudek*, 'burnt land,' 'extensive burns.' Calais and St. Stephen were favorite campgrounds, and Soctomer [informant John Soctomer from Machias] says that *Pemskudek*, 'the extensive burned place' was used for Calais, while *Skudek* was the name for Machias. However, in general use, both were names for Calais and the St. Croix River and were called *Skudenteguk*, 'the burned river.'¹²

These place names furnish evidence of fire in the history of the aboriginal people of Maine, and the location of these names may point to the use of fire in those areas. In Calais, Machias, and other Downeast areas, fire was probably limited to maintaining blueberry barrens, but their presence on the landscape suggests extensive and frequent use predating European arrival.

Because fire and agriculture are so inextricably linked, it is important that we look at the practices of agriculture by the Native American in northern New England. Experts in several fields have long debated the geographical extent of Indian agriculture in New England. Southern New England seems to have hosted a more sedentary agricultural society, while researchers believe northern New England Indians were "less agricultural." Still, evidence of agriculture is widespread in Maine, albeit not as extensive as in southern New England. Samuel de Champlain, a cartographer sailing for France in the early seventeenth century, noted in his travels north along the Maine coast that "all along the shore there is a great deal of land cleared up and planted with Indian corn." George Weymouth, according to historian Howard S. Russell, "marched inland in Maine over meadows that he called fit for pasture, dotted with occasional oak copses. He, too, noticed strawberries, and several other fruits, together with wild roses, groundnuts, and tobacco." Gordon M. Day, an early historical ecologist, pointed out that "Champlain learned that maize was being grown at the mouth of the Kennebec River until enemy



This engraving by Matthaeus Merian, grandson-in-law of copperplate engraver Theodore de Bry, originally appeared in a series of books known as the *Grands and Petits Voyages*, illustrating European voyages to various parts of the world. The series began in 1590 and featured more than 500 engravings. Historians Harald Prins and Bunny McBride used a cropped reproduction of this image for the cover of their 2007 book, *Asticou's Island Domain: Wabanaki Peoples at Mount Desert Island, 1500-2000*, reflecting their adherence to the assumption that the northern boundary line for agriculture lay at the Kennebec River. The original engraving, as shown here, illustrates a corn harvest, suggesting Native agriculture north of the Kennebec River.

raids made it unprofitable.”¹³ A newly released work by Harald Prins and Bunny McBride, *Asticou's Island Domain: Wabanaki Peoples at Mount Desert Island, 1500-2000*, features a cropped image that shows both the use of fire and agriculture in the area of Mt. Desert Island. They explain the cropping:

The cover image is a detail of the engraving shown here in full. The original appeared in a 1627 volume that formed part of a remarkable series of books illustrating European voyages to various parts of the world. Published by copperplate engravers Theodore de Bry

& Main, the series began in 1590 and continued for half a century. Ultimately comprised of 57 parts, collectively known as the *Grands* and *Petits Voyages*, it featured more than 500 engravings. This particular image, made by Theodore de Bry's grandson-in-law Mattheüs Merian (1593-1650) appeared in *Grand Voyages to America*, Part 13 (p.15). It is based largely on a description of Indians hunting moose on Mount Desert Island found in Sir Ferdinand Gorges' 1622 *Brief Relation of the Discovery and Plantation of New England*. In this reference to moose on the Maine coast, Gorges introduced a (briefly used) English place name for Mount Desert Island — 'a great Island upon the Coast, called by our people Mount Mansell.' For the cover, we trimmed the bottom portion of the engraving because it depicts corn-growing, which at the time was practiced by Native people in New England, but not on Mount Desert Island or any other areas east of the Kennebec River.¹⁴

The cropping is significant: contemporary observers and modern ethnohistorians both drew the northern boundary line for agriculture at the Kennebec River, but in fact there is evidence that the agricultural boundary was north of the Kennebec in pre-contact times, and included the Penobscot River Valley.

Documentary evidence suggests that Indians beyond the Kennebec practiced agriculture at least since contact. In 1607, an anonymous explorer in the Kennebec Valley near Augusta "found a gallant Champion land and exceeding fertile," on the York River. Christopher Leavitt, an English mariner, found "good ground, and much already cleared fit for the planting of corn [grain] and other fruits, having heretofore been planted by the Savages who are all dead." While some settlers found evidence of Indian agriculture as far north as Aroostook County two centuries later, the northern limit of agriculture during the contact period seems to have been the Penobscot Valley. In the area near modern-day Mattawamkeag, John Gyles, a young boy who was captured by the Maliseet Indians in 1689, found signs of agriculture. "After some miles' travel," he remembered, "we came in sight of a large cornfield." In 1776 John Pownall wrote that there were "old worn-out clear fields" on the Penobscot River four or five miles south of Old Town, and Eckstorm wrote intriguingly that "the vicinity of Mattawamkeag and Old Town was cultivated early." All in all, the evidence places Indian agriculture in the heart of Penobscot Indian territory.¹⁵

Some historians and ethnohistorians reason that agriculture spread northward after contact because Indian groups traded furs for trade

foods, such as maize grown in southern New England. This reduced the risk of devoting critical spring months to preparing crops that, in a climate with a shorter growing season, might not mature. Given that Indians were concentrating in larger groups to engage French and English traders, the argument goes, their more sedentary ways encouraged agriculture. Others, however, point out that the boundary between agriculture and hunting-and-gathering was shifting when Europeans first arrived on the coast of Maine. Agriculture had been introduced into New England only a few centuries earlier, and New England Natives were still experimenting with crops. With the climate in flux as a result of the onset of the so-called Little Ice Age, the frontier of agriculture could easily have moved north of the Kennebec and back again several times. During the century in which the Europeans arrived, the climate was deteriorating, bringing harsher winters and shorter growing seasons. Thus the New England that explorers described was a shifting landscape, as Dena F. Dincauze explains in discussing the economy of the Pequot Indians to the south. Reliance on agriculture was tempered not only by environmental circumstances, but also by growing friction among the tribes of the Northeast. Agriculture left Indian villagers vulnerable, with their subsistence source exposed to raiding enemies. With inter-tribal tensions rising after the onset of the fur trade, northern Indians may have been abandoning their agricultural practices, giving explorers the impression that their economies were based solely on hunting, fishing, and gathering. In short, to dismiss the possibility of agriculture north of the Kennebec ignores what Dincauze calls the “remarkable dietary resourcefulness of the people” of aboriginal New England.¹⁶

Penobscot cultural traditions, in fact, suggest that agriculture was deeply embedded in their history. Howard Russell points out that the Penobscots were an agricultural people. He cites the example of Peol Sesup, a Penobscot Indian who said, “like all grasses . . . corn grows upward by joints or sections.” Russell construed this comment as indicative of sophisticated agricultural knowledge. “The Indians,” he continued, “observed that the time required to produce and perfect a joint was one phase of the moon, and as the ear of corn starts only from a joint, there was necessarily about seven days between the formation of ears at successive joints.”¹⁷

Perhaps these old agricultural traditions explain the rapid transition to agriculture after the colonial period. As settlement increased and assimilation became a way of life, the Penobscots practiced as much agriculture as the encroaching Europeans. They used broadcast burning to



Fire History Map. Scientific evidence found in charcoal beds and pollen samples from the areas depicted on the map above, suggest that prior to European settlement, fires were most common in areas of highest Native population concentration. This scientific evidence adds credence to the prevalence of native use of fire for forest management purposes in northern New England. Cartography by Michael Hermann.

clear the land and establish village areas. It was also used to clear vermin out of village areas and to burn berry barrens. “The Penobscot,” according to Day, “burned areas on the islands in the bay and rivers to encourage the growth of berries.”¹⁸

By the mid-twentieth century, the Penobscot Reservation included many farms. Ann Irene Pardia, a respected elder of the tribe, recollected: “there used to be farms all along the shore of Indian Island.” She indicated that one farm, on the south point of Orson Island, included an orchard. These farms, she stated, “used to be burned twice a year.” The presence of agriculture does not necessarily mean the use of fire, but it is clear that by the mid-twentieth century, the Penobscot burned on reservation and hunting lands. Both Ann Irene Pardia and Neil Phillips

share accounts of Norman Lolar lighting the blueberry patches on Oak Hill each and every year. Neil Phillips remembers: “we never were afraid of fire; fire was a tool to be used.” He recalled that people used to burn the meadow in Argyle so it would not become overgrown. From the European explorers’ first observations onward to the twentieth-century, there is considerable evidence to suggest Indians used burning for agricultural purposes.¹⁹

Like the evidence for fire’s use in agriculture, there is equal evidence that the Indians of northern New England used fire as a forest management tool. Gordon Day, however, calls it “conjecture how far up the coast the practice of burning the woods extended.” He also found “no early witnesses of actual fires north of Massachusetts Bay.” Day did, however, point out that the descriptions of the land early writers attributed to fire could be found in Maine. Captain Raleigh Gilbert wrote that Maine’s coastal forests were “the most p^t {part} of them ocke and wall-nutt growinge a great assoonder on from the other as our parks in England and no thicket growing under them.” He added a passage culled from Champlain’s voyages near Richmond Island, noting “fine oaks and nut tress with cleared land and abundance of vines which in their season bear fine grapes.”²⁰ Howard Russell listed other evidence that the land appeared to be managed with fire. “In the Penobscot Valley, he [Champlain] remarked, the oaks appeared as if planted for ornament.”²¹ The use of fire in northern New England is by no means as extensive as in southern New England, but did exist.

Does science confirm this impression? Anthropologists and foresters use pollen analysis, charcoal counts, and archaeological investigations to determine the prevalence of fire in an ecosystem.²² These sources do in fact document the presence of fire in the northeastern forest, and with only 12 to 15 percent of all fires in the Northeast attributed to natural causes, namely lightning, researchers must look for other ignition sources for the remaining 85 to 88 percent of conflagrations. In their *Indian Fires in the Prehistory of New England*, William A. Patterson and Kenneth Sassaman divide the Northeast into northern and southern New England. In the former, they found that the “the potential for pre-contact fire . . . was greater on the coast around bays and estuaries, and least along inland waterways. It seems unlikely that fire reached the level of economic importance that it did farther South, however.”²³ Fire may have been less important economically, but it was used. This, they found, was evident in charcoal and pollen deposits.

Charcoal beds are deposited after fires, along with erosional material

shedding off the barren land. When it rains, charcoal is washed into lakes and ponds and deposited in layers. Pollen is useful in studying the types of vegetation in a given area, and like charcoal, it can be found in the sedimentary beds of ponds and lakes. Vegetation information obtained through pollen analysis shows the presence of fire in northern New England; certain vegetation will grow in an area directly after it has burned. Patterson and Sassaman conducted a study of sedimentary beds in lakes and ponds in Maine, ranging from the coast at Long Pond, The Bowl, and Sargent Mountain Pond on Mount Desert Island to inland locations like Basin Pond, Upper South Branch Pond, and Conroy Lake, all near Katahdin. They concluded that “the results of these sedimentary studies suggest that prior to European settlement, fires were most common in areas where, on the basis of archaeological site distributions, Indian populations were greatest.”²⁴ Scientific evidence, in short, adds credence to the use of fire for forest management purposes in northern New England.

The use of fire as a management tool by the Penobscots in pre-contact times is still conjectural, but the evidence weighing on the side of their use of fire is convincing. The use of agriculture, the burning of berry barrens, the pollen and charcoal evidence, and the appearance of the landscape and place names certainly suggest that the Penobscots, like their southern New England counterparts, used fire to shape the land around them.

NOTES:

1. Hiram Chittenden and Alfred Richardson, eds., *Life, Letters, and Travels of Father DeSmet Among the North American Indians* (New York: F. P. Harper, 1905), p. 1047.
2. Stephen J. Pyne, *Fire: A Brief History* (Seattle: University of Washington Press, 2001), p. 3.
3. As remembered by the author; also from Horace Beck, *Glusap the Liar and other Indian Tales* (Cumerland Press Inc., 1966).
4. Hugh M. Raup, “Recent Changes of Climate and Vegetation in Southern New England and Adjacent New York,” *Journal of the Arnold Arboretum*, 18: pp. 79-117, (1937); Emily W.B. Russell, “Indian-Set Fires in the Forests of the Northeastern United States,” *Ecology* 64(1) pp. 78-88, (1983).
5. Shepard Krech, III, *The Ecological Indian: Myth and History* (New York: W.W. Norton), pp. 101-122; William Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York: Hill and Wang, 1983), p. 51.

6. Cronon, *Changes in the Land*, pp. 48-49, 51.
7. Cronon, *Changes in the Land*, p. 50.
8. Fanny Hardy Eckstorm, *Indian Place Names* (Orono: University of Maine Press, 1978; originally published in 1941), p. 1.
9. Bradford Torrey and Francis H. Allen, eds., *The Journals of Henry David Thoreau*, vol. 10 chapter 3 (New York, 1962) pp. 294-295.
10. Henry David Thoreau, *The Maine Woods* (New York: Penguin Group, 1988), pp. 34, 234.
11. Eckstorm, *Indian Place Names*, pp. 28, 43, 66.
12. Eckstorm, *Indian Place Names*, p. 230.
13. Sieur Samuel de Champlain, *Voyages*, translated by Charles Pomeroy Otis (Boston: Prince Society, 1878), p. 65; Howard S. Russell, *Indian New England Before the Mayflower* (Hanover, New Hampshire: University of New England Press, 1980), p. 9; Gordon M. Day, "The Indian as an Ecological Factor in the Northeastern Forest," *Ecology* 34 (1953): 331.
14. Harald Prins and Bunny McBride, *Asticou's Island Domain: Wabanaki Peoples at Mount Desert Island, 1500-2000: Acadia National Park Ethnographic Review and Assessment* (Boston: Northeast Region Ethnography Program, National Park Service, 2007).
15. Russell, *Indian New England*, p. 15; John Gyles, *Nine Years a Captive, or John Gyles Experience Among the Malicite Indians from 1689 to 1698* (Saint John, New Brunswick: Daily Telegraph Steam Job Press, 1975), p. 11; Day, "Indian as an Ecological Factor," p. 331.
16. Dena F. Dincauze, "A Capsule Prehistory of Southern New England" in Laurence M. Hauptman and James D. Wherry, eds., *The Pequots in Southern New England: The Fall and Rise of an American Indian Nation* (Norman: University of Oklahoma Press, 1990), pp. 31-32.
17. Russell, *Indian New England*, p. 150.
18. Katherine M. Doherty and Craig A. Doherty, *The Penobscot* (New York: Franklin Watts, 1995), p. 29.
19. Author Interviews with Neil Phillips and Ann Irene Pardilla, 1999.
20. Day, "Indian as an Ecological Factor," p. 335.
21. Howard S. Russell, *Indian New England Before the Mayflower*, p. 221.
22. William A. Patterson III and Kenneth Sassaman, *Indian Fires in the Prehistory of New England* (New York: Plenum Publishing Corp, 1988), p. 123.
23. Patterson and Sassaman, *Indian Fires*, p. 122.
24. Patterson and Sassaman, *Indian Fires*, p. 126.