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The Introduction of the European Colonial and Mercantile World into New England: Transformations of Human Ecosystems

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In the history of what was to become the northeast United States, there was a dramatic change in the non-human environment and the human sociocultural systems between the pre-colonial and colonial periods. Prior to human inhabitation of the area, change was driven by glaciers, water, natural fire, and non-human organisms. Once humans entered the picture their activities contributed to alterations of the non-human environment. But not all groups of humans impacted the non-human environment to the same degree. Different modes of production and ideologies shaped the kinds and levels of human impact on the non-human environment.

In order to examine how interactions between the non-human environment, human production, and ideological systems created these changes, I utilize systems models. I constructed two models: one portraying the pre-colonial human ecosystem and a second model representing the colonial transformative human ecosystem, New England's movement into the mercantile world system. The first model represents New England at the end of the sixteenth century. The second model represents the same region at the beginning of the eighteenth century. In the pre-colonial model, interactions are locally based, while the second model portrays outside processes which include the expansion of the European mercantile market and general European influences.

William Cronon's *Changes in the Land* and Carolyn Merchant's *Ecological Revolutions* serve as the basis for examining this transformation.

Pre-Colonial Conditions

Figure 1 represents the Pre-Colonial "New England" Human Ecosystem. It portrays, energy, matter, and information flows.

Non-Human Environment

The non-human environment within what later became known as New England, represented in the box on the middle left of *Figure 1*, exhibited great diversity upon the arrival of Europeans. This diverse environment was a result of ecological processes interacting with human activities. One human activity that greatly influenced this diversity of the non-human environment was the practice of selective burning. Fire, represented as a tool gate in *Figure 1*, was an important tool utilized by Native Americans to manipulate and manage the New England non-human environment. Setting fires served to "driv[e] game, improv[e] visibility, facilitat[e] travel, driv[e] away reptiles and insects, increas[e]

the supply of grass seeds and berries, and for offense and defense in war" (Day 1953: 334) along with clearing land for settlement and for horticultural plots in southern New England. Notice in *Figure 1* that burning impacted much of the non-human environment, having inadvertent impacts in addition to the intended results. Thus, *Figure 1* shows that the common belief that Native Americans had no significant impacts on their non-human environment is false.

Social Structure and Economics

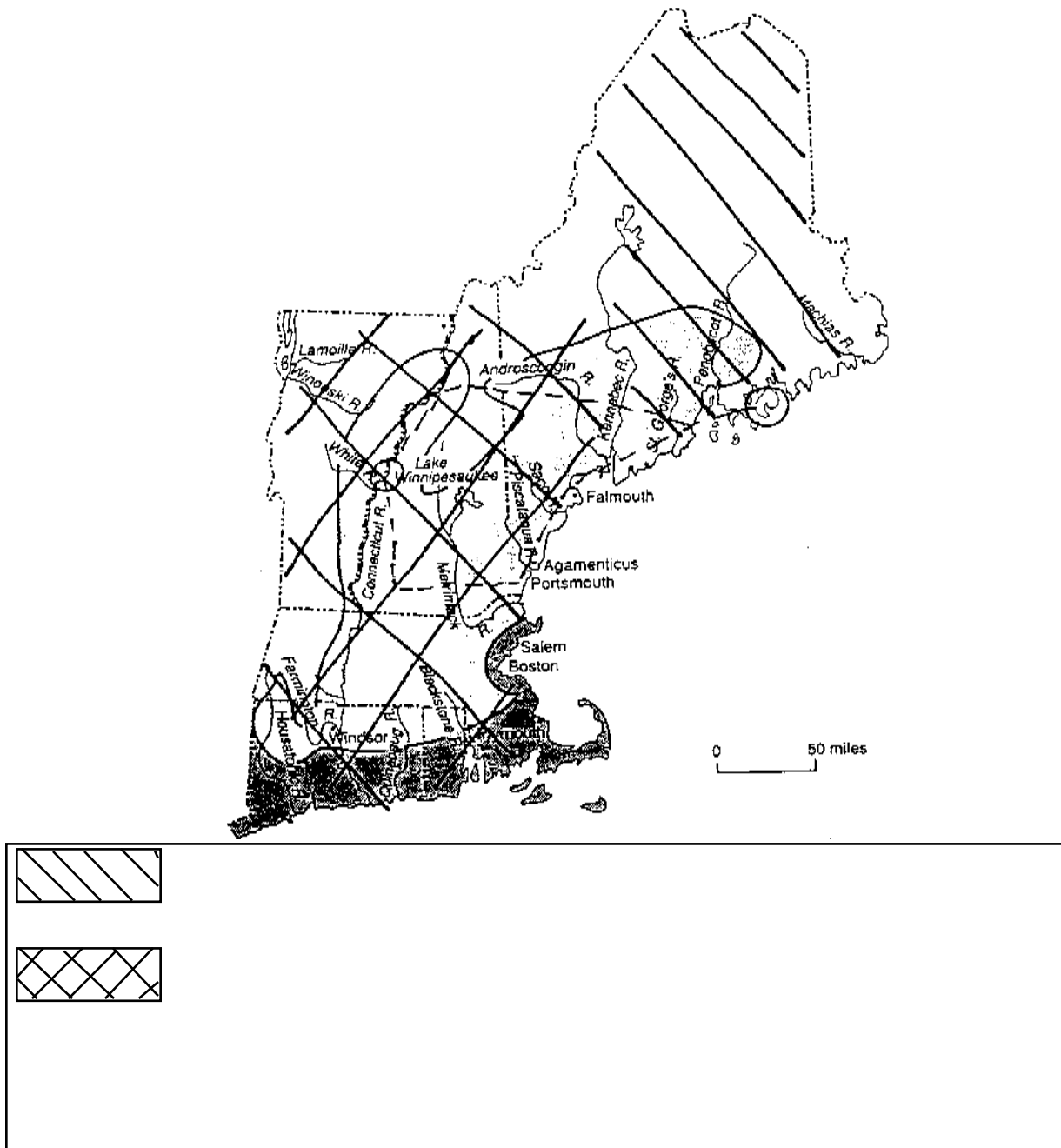
As seen in *Map 1*, in pre-colonial New England after the "horticulture revolution one thousand years ago" (Merchant 1989:38), the Native Americans south of the Kennebec River in Maine practiced some horticulture along with hunting and gathering while those north of the river did not engage in any agriculture.¹ The reason the northern Native Americans did not engage in cultivation may be due to a shorter growing season (Thomas 1976: 7) and soils less suitable to agriculture (Merchant 1989: 30). While both northern and southern Native Americans were nomadic, with mobility based on seasonality, the horticultural practices of the southern Native Americans led them to a more sedentary lifestyle than the northerners.²

The principal pre-colonial Native American social and economic unit, as seen in *Figure 1*, was the village. A village was usually composed of several hundred people who were "organized into extended kin networks" (Cronon 1983: 38). The green wavy line in *Figure 1* represents the cyclical information that was transmitted to the Native Americans via sunlight and rain patterns, temperature, and general weather conditions along with life cycles of plant and non-human animal life. The use of this information dictated Native Americans' seasonal living and subsistence patterns. During seasons of food scarcity, a village broke into its kin groups and these groups spread themselves across the landscape (Day 1953: 341).

Climatic and physiographic qualities influenced what Native Americans of different localities hunted, gath-

¹Throughout the rest of the paper I will refer to those south of Kennebec River as southern Native Americans that generally practiced horticulture and those north of the river as northern Native Americans who were primarily hunters and gatherers.

²In *Figure 1* the northern and southern Native Americans are portrayed together.



MAP 1: SUBSISTENCE PATTERNS OF NEW ENGLAND NATIVE AMERICANS PRIOR TO COLONIALISM

ered, and produced. As shown in *Figure 1*, neighboring villages would exchange goods to obtain items that were scarce in their area or difficult to obtain or produce. The exchange of goods between villages also played an important part in alliance building. Southern agricultural Native American villages traded corn for furs, skins, and meat from the more nomadic northern Native Americans (Cronon 1983: 92).

*Ideology*³

As *Figure 1* shows, Native American ties to and dependence upon their non-human environment were reflected

in the nomenclature they used. Northern names of places were dominated by animal names. Southern places had names related to agricultural production. Month designations also reflected seasonal subsistence strategies (Thomas 1976: 5).

³Knowledge about pre-Colonial Native American ideology is limited. What is known tends to be from a white outsider's perspective. Merchant (1989) gives a lot of information on pre-colonial Native American ideology, but much of it can be viewed as an idealized white perspective. Thus, I will only briefly examine ideology in this section.

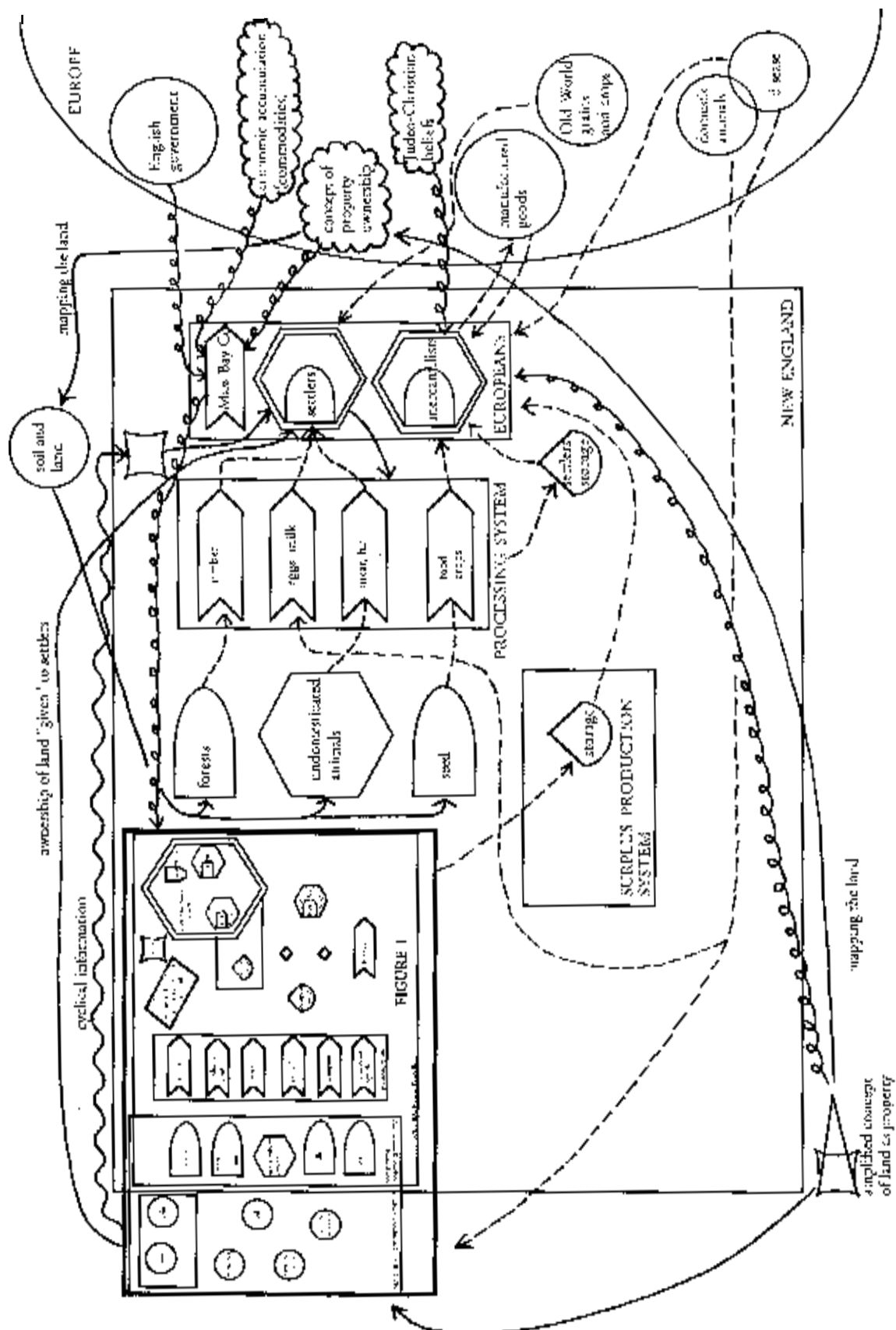


FIGURE 2- COLONIAL PERIOD NEW ENGLAND HUMAN ECOSYSTEM: MATTER, ENERGY, INFORMATION, AND PROPAGANDA FLOWS

According to Merchant, in order to ensure survival, the Native American “environmental ethic” promoted the limited use of resources (1989: 102). This ethic is portrayed in *Figure 1* as a screen. Taboos, ceremonies, and mythologies served as regulatory mechanisms in Native American subsistence activities (Merchant 1989: 44). Many bands believed they had animal ancestors to whom they paid respect and strengthened bonds with by calling humans by these animal names (Merchant 1989: 47). Merchant emphasizes animal ancestors and concern for future decedents as representative of the homeostatic relationship Native Americans had with their non-human environment.

Colonial Conditions

Figure 2 represents the Colonial New England Human Ecosystem. It portrays energy, matter, information and propaganda flows. The upper left hand corner portrays the Native American Human Ecosystem that contains the same processes as the Pre-Colonial Ecosystem, *Figure 1*, but many of these processes were disrupted or altered as a result of European influences. The following discussion will examine the perturbation of the Native American system with the introduction of the European colonial system.

Non-Human Environment

In southern New England, where the majority of settlers established themselves, the subsequent decrease in animal populations was due both to trade and competition for land. In the north, where population density was low and the majority of export hunting occurred, over hunting due to trade demands was what created the decrease in animal populations (Cronon 1983: 104).

As shown in *Figure 1*, by the seventeenth century, domesticated animals were brought from Europe to New England, accelerating degradation of the New England non-human environment through grazing. Colonists also brought with them Old World grains, root crops, and vegetables along with flowers and garden plants to establish more familiar non-human surroundings (Merchant 1989: 86).

Health and Demographics

Devastating diseases, represented as a source circle on the right hand side of *Figure 2*, were introduced by domesticated animals and humans. Those Native Americans having the most contact with Europeans suffered more death from diseases (i.e. the fur trading Native American communities). Between 1600 and 1675, the indigenous population of New England decreased from 70,000 to 12,000 (Cronon 1983: 89), resulting in “social and economic disorganization” (Cronon 1983: 86). Subsistence patterns were disturbed, causing scarcity of food at unanticipated times of the year, resulting in further weakening of the population. This disturbance of production patterns was a contributing factor to Native Americans’ dependence upon exchange with Europeans (Merchant 1989: 56), as shown by the trade lines in *Figure 2*.

Social Reorganization

New economic commercialism introduced by Euro-

peans changed settlement patterns among Native American communities. Year round sedentary populations established themselves along southern coastal areas in order to produce wampum for use as currency (Cronon 1983: 101). *Figure 2* shows the exchange of wampum between Native Americans, settlers, and mercantilists. In the north, migratory hunter gatherer populations shifted to intensive hunting of game near merchants who would buy their goods and sell them in Europe. Subsequent military conflict also encouraged dense sedentary settlement pattern allowing for Native Americans to join together in protection against Europeans and rival Native American tribes. Yet, condensed settlement patterns resulted in easier transmission of disease and reliance upon a smaller, more vulnerable food supply.

Economics

Nomadic subsistence patterns were further disrupted by Native Americans’ decreased access to land as Europeans claimed legal rights to communal Native American lands. The loss of access to hunting and gathering areas resulted in Native Americans’ decreased ability to sustain themselves. By end of the 1600s, tending of European-imported livestock became a part of some Native Americans’ survival strategies (Cronon 1983: 103) and many Native Americans were dependent upon Europeans for basic survival needs. Native American reliance on European textiles for clothing increased as Native Americans sold most of the furs they hunted (Cronon 1983: 102) because the furs had a higher market value than European-made clothes.

The first interaction between Native American and Europeans was through trade. Native Americans exchanged furs and skins for European goods including metal items (e.g. tools), ornamental objects, and woven fabrics. This exchange began one hundred years prior to the establishment of significant English settlements (Cronon 1983: 82). This trade resulted in Native Americans killing more game more continuously than they ever had before.

According to Cronon, more important than the introduction of European goods was the transformation of Native American alliance building exchanges into a commercial market system (Cronon 1983: 97). Although trade played an important role in Native American life prior to European arrival (see *Figure 1*), there never had existed a class of middle people—merchants—who allowed for trade to occur between groups long distances from each other at such a large level.

Most early European farmers in New England owned their own land and were subsistence farmers. Yet the settlers were much more market-oriented in comparison to the Native American agriculturalists. The small amount of surplus produced by subsistence farmers was used to buy imported goods (Cronon 1983: 77).

Settler subsistence strategies paralleled southern New England Native American agriculturalist strategies in many ways. Both groups followed cyclical patterns of farming. For both, maize was the principal crop. Further, both

relied to some degree on hunted game for a portion of their subsistence. One of the most significant differences between the settlers and the Native Americans was to be found in the settlers agro-ecosystem technologies. The settlers brought with them the farming triad of domesticated animals, the moleboard plow, and monocropping.

Ideology

The first Europeans were explorers and mercantilists and their goal was to extract resources for use and sale in Europe. Europeans' view of the New England environment was limited to what could be used in the expanding market economy, seeing the non-human environment as providing commodities. A "merchantable commodity" (Cronon 1983: 20) is an item that was used but scarce in Europe. An item's European scarcity was what made it cost-effective to transport a given good across the ocean. European needs, desires, and scarcities directed the extraction of natural "resources" which altered the ecology of New England.

Viewing "nature" in terms of commodities meant the ecosystem was viewed and treated as having independent parts rather than interrelated components, parts that could be abstracted for monetary gain. But Cronon points out that settlers who worked the land and lived from it recognized the symbiotic relationships within the non-human and human environments. Although not as knowledgeable about their surroundings as the Native Americans, settlers were not alienated from the non-human natural environment. Tree species were used as soil quality indicators by colonial farmers (Cronon 1983: 114). The settlers' system was also cyclical, just simpler and more concentrated than the Native Americans' system. One of the most significant differences between the Native American and settlers' subsistence systems was the mobility of the Native Americans versus the sedentism of the settlers. According to Cronon this difference was a principal conflict between the ways the New England Native American and settlers interacted with their environment (1983: 53).

Along with their mercantilist economic perspectives, Europeans brought with them their Judeo-Christian beliefs which placed humans, as the chosen ones, above nature. A hierarchy was believed to exist in which wilderness was at the bottom, next came animals, and above all else were humans (Merchant 1989: 4).⁴ The European colonists viewed New England and its Native peoples through this Judeo-Christian lens. Thus, to a European colonist in New England, native peoples, along with the wilderness, needed to be "civilized." An important part of "civilizing" was the act of accentuating the difference between humans and wilderness; and the first step in this process was defining the non-human environment.

Delineating non-human environments was a cultural norm Europeans brought from their homelands. The fact that Native Americans had more of a communal sense of land usage, and viewed land as a component of subsistence and life in general rather than a commodity to be prized, strengthened Europeans' belief that Native American rights

to land ownership did not exist. The only land Europeans viewed as being "owned" by Native Americans were the garden plots. Land used for cultivation was the only land that was considered to be improved. Improvement was the principal obligation of a land owner and thus was a central part of taming the wilderness.⁵

Judeo-Christian beliefs again were involved. The Bible called for God's people to "fill the earth and subdue it" (Cronon 1983: 77). Thus, southern Native Americans who engaged in agriculture were the only Native Americans deemed to have property rights by the European colonists.

It is important to point out that Native Americans' and settlers' concepts of ownership were not based upon a strict dichotomy regarding land use. The colonists also had communal land and areas where ownership was unclear. Colonists' views on land varied according to what part of England they came from. Just as relationships to land varied among bands and villages, so too did it vary among European ethnic groups.

The English Crown played an important role in colonists overtaking Native American lands in the late seventeenth century. Because of previous conflicts, the Crown dictated that no individual could buy land from the Native Americans. Colonists were required to ask permission from the British government to buy or sell land. The government granted the Massachusetts Bay Company rights to all land and told them to distribute it (Cronon 1983: 71). Sometimes, land was granted to towns and then transferred to individuals. Within towns different areas were delineated for specific use, i.e. woodlot, meadow, or cornfield (Cronon 1983: 74). Once these lands went into individual hands, these separations were no longer communally defined.

The process of mapping the land, a necessary corollary to land ownership, was important in shaping the New England non-human environment. Mapping the land imposed spatial patterns that amplified the view of land as a commodity. Merchant (1989) views the process of mapping and cataloging as an important part in re-constructing the non-human environment and perceptions of the environment to fit European demands.

Summary

Humans have always impacted their non-human environment, but the degree of this impact is dependent upon the modes of production and ideologies that a human

⁴Although this sixteenth century based human—nature dichotomy was softened with the influence of the Protestant wilderness ethic, in this transition model I am focusing on Puritan ideals of the subjugation of wilderness.

⁵John Locke articulated this point in 1690 when he stated, "As much land as a man tills, plants, improves, cultivates, and can use the product of, so much is his property. He by his labor does, as it were, enclose it from the common" (Merchant 1989: 163).

group actualizes. With the help of flow models, I have explored the shifts in the New England human ecosystem that occurred between the pre-colonial and colonial periods. The pre-colonial "New England" non-human environment was comprised of great diversity, which had in part been shaped by Native American activities. Hunting and gathering along with horticulture, in some cases, were the means of Native American subsistence. Seasonality and non-human environmental conditions shaped subsistence patterns and social structure. Because Native American lives were so directly linked to the non-human environment, "nature" served as a base for their ideology.

Europeans' entrance into the landscape resulted in a decrease in animal populations. This transpired from overhunting and competition for land. The resource-exploitation-base of the mercantilist system converted much of the non-human environment into raw materials needed for surplus in the European market. The introduction of domesticated animals and Old World crops additionally disrupted the ecosystem. For Native Americans, the introduction of diseases, a decrease in access to land, and a disruption of local subsistence patterns created a cycle of dependence upon exchange with Europeans. Native Americans shifted to sedentary, larger settlements to engage in trade and to better defend themselves against European military aggression. This paralleled the transformation of Native American alliance building exchanges into a commercial market system. The Judeo-Christian based European ideology shaped colonists viewing the non-human environment from a resource obtaining, expansionist perspective. Native peoples and land were to be "civilized". The net effect of the mercantilist system and Europeans dominating Native American ways of life was a significant transformation in the New England human ecosystem.

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