



Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
2005 Volume V: Ecology and Biodiversity Conservation

Harvesting the New World: Changing Land Uses and Contact Between Cultures in Colonial Times

Curriculum Unit 05.05.10
by Anthony Pellegrino

Human history is fundamentally the story of how *Homo sapiens* have expanded over the Earth, how they have interacted with the natural systems of the Earth, and how they have interacted with each other. As a species we have populated, or at least visited, almost every environment on the surface of this planet. Our population has exploded to over 6 billion individuals, and is not predicted to level off until well into this century. We are arguably the most well adapted and successful species on the planet. Sometimes it is difficult to remember that even with these evolutionary accomplishments, and with advent of incredible technologies, we still live in a world where our lives ultimately depend on how we use the land we live on. It is one of the great ironies of our species that along with the ability to do and create so much, we also have the unrivaled ability to change and destroy the world we inhabit. Indeed, the long run viability of our species depends to a large degree on how well we can manage the effects we cause on the natural systems of our planet.

The time period commonly held as the first global age or the "Colonial Era," provides an interesting case study not only in how human beings from different backgrounds have interacted with each other in the past, but it also provides us with a unique opportunity to examine how humans have affected the natural systems of our planet. Often when a unit on Colonialism is studied in the High School classroom, the learning centers around the political, economic, and social effects of the era. Teachers often focus on questions like, "Why the colonial system was chosen by the powers of Europe," or "Who profited and who lost out under the colonial system?" And students will almost always cover how European colonizers interacted with native inhabitants. Quite often little is mentioned of how land use in these areas changed after the migration of European mercantilists to these areas. Either because of time constraints, or because it is only obliquely connected to "World History," the affects on the natural systems of the Earth are usually glossed over. Unfortunately this leaves our students with an incomplete picture of what happened during this time, and ignores an important part of what history is. Without an understanding of how humans have changed the Earth, our students are less likely to actively work towards managing these changes. In an era of global climate change at unprecedented rates, understanding these changes in how the Earth works is not simply an academic endeavor, it is of critical importance to the future of our species.

This unit will introduce students to the Colonial period, specifically highlighting some of the environmental changes that occurred in New England and the Great Plains as Europeans visited and colonized these lands. Furthermore this unit is also designed to teach the ideals of conservation by having students examine examples of environmental change that have affected the planet negatively. By studying how European and

native populations interacted in the past, students will come to more fully understand the historical themes of interaction between distant cultures.

Goals of this unit

The purposes of this unit are to help students

- 1) Understand the diversity of Native American populations.
- 2) Understand the social, and the ENVIRONMENTAL affects of colonialism on the native peoples and lands of the time period.
- 3) Understand that all societies regardless of setting make land use decisions that can affect the quality of life for future generations.

Objectives

The objectives of this unit are:

1. Students will be able to define key low frequency terms used in this unit.
--Vocabulary list not yet completed.
2. Students will identify areas of importance to this unit on a map, and be able to identify the modern day countries that occupy these places in a short quiz.
3. Students will analyze and appreciate the diversity of Native American cultures.
4. Students will analyze the types of land use typical to the Pre-Columbian Western Hemisphere.
5. Students will analyze, discuss, and judge Native and European values concerning property and land use.
6. Students will analyze how land use changed in the Western Hemisphere after the arrival of Europeans.
7. Students will examine the ways in which changes in land use, and the arrival of Europeans affected some Native populations of the Americas in a class discussion. They will be graded on how well they participate in this discussion, as outlined on a discussion rubric.
8. Students will evaluate the extent to which nonanthropogenic factors such as disease altered the populations of the Americas.
9. Students will create a short computer aided presentation detailing how a particular modern land use introduced by Europeans has changed the character of the land in The Americas.
10. Students will evaluate the extent to which modern land uses are beneficial or detrimental by writing a CAPT style persuasive essay on a topic related to land use/ human activities and their consequences.
11. Students will evaluate and judge how societies around the world make decisions on how to use the land they control.

Academic Setting

The unit Harvesting the Americas is intended to be taught in the 9th Grade World History course. With small alterations in this curriculum unit this subject could also be taught in a US History class as well. This particular unit has been designed for the students of Connecticut State Scholar Academy on Ella Grasso Boulevard. Our classes are designated as College Prep level classes, but in actuality a majority of our students score below grade level on the Connecticut Mastery Test (CMT). To address this issue the unit has been designed to increase the reading ability of students by providing them with a significant set of readings to be completed with an included vocabulary list. Group learning and student presentations will be included in this unit to provide students the opportunity to showcase their individual abilities. Furthermore, because of the remedial level of many of our students this unit is designed to be skill based. Students will work with vocabulary, maps, readings, and computer technology.

Content: Pre-Columbian Ways of Life

As most are aware, there are a number of myths and stereotypes associated with the people who inhabited North and South America before the arrival of Christopher Columbus. These people, commonly referred to as Native Americans first arrived on the American land mass some 12,000 years ago by crossing the Bearing land bridge that connected present day Alaska to Asia. (Diamond 1997) Within two thousand years, humans had spread over the entirety of North and South America, and adapted to most of the different environs they encountered. To deal with these myriad different habitats, human beings evolved many different and diverse cultures which would come to influence when exactly these native peoples would make contact with Europeans.

In my first year teaching this subject I detected that among my students one of the more prevalent stereotypes about Native Americans was that they existed as a homogenous and monolithic people. The stereotype continues that all Native Americans hunted buffalo, lived in teepees, and wore feathers in their hair, living in perfect harmony with nature. The first point of this unit will be to highlight the diversity of Native American life styles and cultures. In addition to the stereotype that all Native Americans lived on the North American prairie, many of my students seemed to believe that the original inhabitants of the Americas lived in perfect harmony with nature. This in fact is a fallacy that permeates our culture to this day. The truth of the situation is that Native American cultures from Tierra del Fuego to New England changed the land they lived on in a number of ways. Without looking at ancient native cultures it is impossible to understand why our forests look like they do today. (Foster, 2003) The story of European colonization in the new world is not as simple as saying Europeans came here and changed a pristinely natural ecosystem into something less natural. That account would be too simplistic. Instead they came to a land where many changes had already been forced upon the natural flora and fauna of the region by its original human inhabitants.

Fossil evidence indicates that native peoples had inhabited the land of New England for about ten thousand years prior to European arrival in the 16th century. In this time inhabitants invented many methods for maximizing the resources they could glean from the land. One such method developed by these native people was controlled burning of forests to clear underbrush. Many of the swaths of coniferous forest we see in New

England today were able to flourish as a result of these anthropogenic forest fires.(Cronon 1983) Not only does fire fundamentally changes the chemical composition of soil, it also clears the predominant vegetation that exists, allowing for new species to take hold in areas that they otherwise would have been crowded out of. Thus, by burning boreal forests, coniferous tree species that would otherwise have not been able to flourish did, resulting in a wider variety of tree species living in New England. These coniferous forests then further changed the forests by lowering the pH of the soil they inhabited. To Native Americans, the meadows created by burning sections of forest were an important part of their complex hunting strategies. By bating animals to eat the tender meadow grass that would populate previously burned areas, Native Americans maximized the amount of food they could hunt with the least possible effort. It is certain that Native Americans did not mind changing or defacing the natural landscapes of the places they lived if it helped them to reap maximum reward from the Earth.

Native Americans in New England were also skilled farmers who managed to feed themselves primarily through agriculture. Unlike European settlers Native American women were the primary farmers in the community. Also, unlike European farming techniques which relied on cleared fields which could be tilled, Native American farms moved with their owners. Living a semi-nomadic life allowed the Native Americans of New England to farm and live wherever the conditions allowed them to. Europeans invested massive amounts of labor into clearing farmland. This made them much less likely to abandon a settlement once they arrived. Natives on the other hand, whose settlements moved with the seasons farmed wherever the conditions presented themselves. If an area's soil was depleted they would simply move their settlement to a place which had not seen such intensive human land use. (Cronon 1983) Thus unlike European settlements which required an initial period of very intensive labor to clear land, Native farming techniques negated the need the stay in one place very long. The obvious result of this difference was that once Europeans settled in an area they were very unlikely to leave it.

Also alien to the first European settlers was the Native use of multi-crop fields. Europeans were unaccustomed to the ways in which Natives planted their fields. Native American farming looked like an unorganized mess of cornstalks, beans, and squash to the first colonists. Whether aware of it or not though, the planting of nitrogen fixing beans with other crops helped to maintain the fertility of the growing fields used by Native Americans. (Cronon 1983) All crops deplete the land of certain chemicals, some more than others, because they need them to grow. Corn in particular has an especially high need for nitrogen, and as one might imagine is known for robbing soil of its ability to support crops. Modern farmers overcome this problem by fertilizing fields with massive amounts of nitrogen rich compounds that artificially fertilize the land. Early settlers used methods such fertilizing with manure or carrion. Whether they knew it or not though, Native Americans had a method of farming which involved planting beans with their corn and squash crops. Beans naturally deposit nitrogen in the soil, and thus naturally fertilized the land for corn and squash. To underscore for students how different Native farming methods were from English ones, I this quote from famous explorer Samuel de Champlain, "with the corn they put in each hill three of four brazilian beans, which are different in colors. When they grow up, they interlace with the corn, which reaches to the height of from five to six feet; and they keep the ground very free from weeds." (Cronon 1983) As a result of these organic farming techniques Native Americans in New England were able to support communities that commonly reached 400 individuals during seasons of plenty. In times of scarcity, Native Communities would often splinter off into smaller kin groups to find sustenance. In this way Natives rarely over used the land to the point of depleting its natural resources.

A cautious reader may ask themselves then, "What is the difference between Native and European land use?" Why does it seem that the character of European land use had much harsher consequences associated with it, than Native land use? The answer lies not in the motives of these two different cultures, but in means by

which they reaped the bounty of a productive Earth. To paraphrase William Cronon in his seminal work *Changes in the Land*, land use strategies of Native Americans in our part of the country were less intensive than European ones because they were less permanent and sedentary approaches to using the Earth's resources. (Cronon 1983) Simply put, Native Americans in New England had no problem harvesting the natural bounty that surrounded them. To harvest the Earth though, they used methods that drew from a number of sources and places, instead of clearing large swaths of land for farming. The result was a natural landscape that was greatly altered by human intervention, just not altered in such a way that was readily recognized by European explorers and settlers. Indeed to the first European settlers, New England seemed like an endless source of raw material.

In addition to simply commenting on how NE native peoples used the land, a discussion of Native ideas on property must be mentioned. Cronon points out that Native Americans in New England had very different ideas about property than the Europeans they would later encounter. Native Americans lived in ways that baffled the Europeans whom they encountered. The fact that individual Natives had no desire for material objects other than what could be used immediately confounded Europeans inculcated with beliefs in the value of capital and ownership. (Cronon 1983) As we will discuss in the section entitled Post Columbian America, this difference in value systems would play a significant role in the interplay between these two cultures.

North American Great Plains & Southwest Natives

The most common image modern Americans have of Native Americans is that of the Plains Indian. Reinforced by mainstream media sources such as television and movies our students' ideas about what Native American life typically seem to involve hunting buffalo and living in teepees. One of the main goals of this unit is to highlight for students the fact that not all Native Americans lived like this. By showing students that media can confuse the reality of situations, they hopefully will become more media literate. Native land uses in these areas while not the same as those of Natives in New England mimicked the imprint left on the land. In the Great Plains prairie of North America lived many different cultures. They were for the most part nomadic hunter gatherers whose lives were tied to the migrating cycles of the buffalo. These various tribes such as the Sioux lived in small communities that left little imprint on the land. There is evidence though that these hunter gatherers maybe have driven some large mammal species to extinction by over hunting. Large moose and mastodon species in the area all seem to have gone extinct around the time of arrival of these Native people. While the disappearance of these animals must have had ecological consequences, this is only highlighted to further show that Native Americans were not ecological angels. The effects they had upon the land were simply less intrusive than those of Europeans.

In the Southwestern United States Native Americans faced a very different set of circumstances than those in New England or the Great Plains. For the most part these Native Americans encountered Spanish as opposed to English and later Americans settlers. More importantly though was the ecological differences of these areas. The desert environment in the Southwest necessitated different land uses than in these other areas. There are few large game animals in the deserts of the Southwest so hunting played a small role in feeding these people. Tribes such as the Hopi and Navajo who lived in this area relied heavily on irrigation to feed their populations which lived in small communities. By bringing water to areas that would have otherwise had very little Native Americans in this part of the country forced many changes upon the land, and created artificial

oasis that attracted many different species.

Post-Columbian Ways of Life

Colonialism

The first part of this unit will be a discussion of what colonialism was and why it was so advantageous for European nations to practice it. It is important for students to understand that colonies were important for the economies of European nations. Students understand the desire to make money and look powerful. With this constructivist connection teachers can help students to realize that colonies were created to make money and increase the prestige of the parent nation. Through the uses of a world map students will identify the major countries that were involved in colonizing the Americas, and the respective areas of the Americas that they colonized. In addition a discussion of the resources that were economically attractive to Europeans will help the students to understand the economies of the time, and to help them realize that human needs and desires change over time. Some resources to mention could be furs, lumber, exotic food stuffs such as sugar, tobacco, and of course precious metals. Basically we give students a reason why Colonialism began, and what brought Europeans to the New World, so they can come to understand what happened when Europeans came into contact with Native cultures.

The Change from Native to European Communities

When Europeans arrived in the New World they in many ways set out to replicate the society they had known in Europe. They created many of the same institutions that had been present in Europe, and they attempted to change their physical landscape to more closely resemble that of Europe's. As Native American land was either bought or taken, the small Native communities that had populated the area gave way to the more permanent settlements of Europeans. This entailed a clearing of forest that left unmistakable changes on the land. The sheer amount of deforestation is incredible. For example, at one low point Connecticut had as little as 4% of its area covered in forest. One traveler of the time period reported that in his 240 mile journey from Boston to New York that he passed through only 20 miles of forested area. (Cronon 1983) This kind of deforestation was caused by the energy demand of Europeans during the winter months. The average New England family burned 20-30 cord of wood during winter. This is a pile of wood roughly 4' wide by 4' high by 300' long. It is no wonder that New England and many other New World forests were severely depleted within 150 years of European arrival. There were indeed many ecological results of this thorough deforestation, the greatest of these was to limit and splinter the habitats of many species. Also without the shade of a forest canopy summer temperatures reached much higher, on average 11 degrees Fahrenheit. (Cronon 1983) The combination of splintering habitats and increasing the average yearly temperature had negative affects on many of the ground dwelling species of New England.

One consequence of special interest to the colonists was that deforestation probably led to an increase in disease. Forests lose a great deal of water through transpiration from trees. Without trees to soak up rainwater there is an increase in runoff on the forest floor. As with most land uses there are always unintended consequences, and this situation is no different. The increased runoff that resulted from this deforestation led to the pooling of water in low areas, and a proportional increase in mosquito populations. The increase in mosquito population could be one of the major causes of the frequent fevers and other sicknesses that

colonists commonly complained of. So as is often the case with ecological changes caused by humans, the unintended consequences can have very detrimental effects on the people who cause them.

When approaching this topic with students it is important to have them empathize with the colonists. See if they can come up with the different uses for trees that the colonists may have had. These could include building construction, ship building, especially their masts, fencing material for livestock, and of course heating fuel. It is important to describe that the colonists did not realize that forests were exhaustible. In comparison to the Europe they had left the bountiful forests of the Americas seemed endless. A comparison could be made with colonists of yesteryear and the motorists of today. While colonists used wood, and drivers today use petroleum, both heavily relied on a natural resource that seemed inexhaustible, and that was readily available. It is important not to make colonists out to be ecological demons bent on destruction of natural resources, but to show why they may have chosen the land uses that they did. This will help later in the unit when students are asked to analyze modern land uses and evaluate them in terms of their whether or not they are ethical, fair, and necessary.

Disease and its consequences in the New World (Guns, Germs, and Steel)

While Europeans held a technological advantage over Native Americans in the kinds of weapons and tools they possessed, the greatest killer of Native Americans was by far the diseases which Europeans brought with them to the New World. There have been many explanations as to why Europeans carried so many diseases that Native Americans had never encountered but the most current explanation is articulated in the book *Guns, Germs, and Steel* by Jared Diamond. This book is not only very interesting to read, but it is an invaluable source for Social Studies teachers seeking to increase their knowledge of human social evolution. Diamond's goal in writing this book is to explain why some cultures eventually triumphed over others as opposed to vice versa. Two of the reasons have to do with technology. The advantage of guns is relatively obvious and requires little explanation. Steel refers to a society's ability to craft tools that give them a competitive advantage. With germs, Diamond argues that societies with better resistance or immunity to communicable diseases have a better chance at survival. In ecological terms we call the ability to survive and reproduce fitness. Thus, some societies are either more or less fit depending upon how well their bodies can fight germs. The question that begs to be asked is, "What made European society so much more fit than Native populations around the world?"

In addition to this Diamond argues that there is a great deal of evidence linking disease transmission rates with a person's proximity to livestock. Evidence indicates that societies with domesticated animals were much more disease resistant than those without livestock. The argument goes that most of the diseases that have plagued mankind for millennia originally were transmitted to humans from domesticated animals. The increased immunity that Europeans had to diseases like smallpox and measles came from thousands of years of living side by side with these animals. This is important because without immunity to easily communicable diseases Native societies stood little chance of surviving when Europeans arrived. Single epidemics of smallpox could wipe out more fifty percent of an area's indigenous population. (Crosby 1986) As Native American populations experienced wave after wave of epidemics their population was eventually reduced between eighty and ninety percent. All told in the between 1600 and 1675 the Native American population of New England fell from about 70,000 to less than 12,000 individuals. (Cronon 1983)

Besides the visceral horror that an epidemic such as this might evoke, it is important for students to understand the social effects that an epidemic such as this can have. Native society broke down in the face of these epidemics. Villages were abandoned and planting cycles were missed leading to famine. Connections

could be made to the AIDS epidemics of sub-Saharan Africa, or to the Asiatic Bird Flu outbreaks in Southeast Asia to draw attention to the plight of people in that part of the world, and to show a modern connection to the curriculum. Society cannot function in the face of an epidemic with 80-90% mortality rates. A game designed to illustrate this will be implemented during this unit, to help students realize the power that epidemic diseases have played in human development.

Differences in Native American and European Values

With the death of so many Native Americans from disease, and the inferiority of their weapon systems, it should come as little surprise that Europeans were able to push the Native aside with few problems during the colonial era. Desire for open land, ever scarcer resources, and profit inevitably drew Europeans further and further away from the coastline and into contact with more Natives. Besides the sense of racial superiority that most Europeans felt, there was also a sense among European settlers that God had given them the right to take the land of North America. They felt that if the Native Americans chose not to improve the land that they had the god given right to change the land as they saw fit. Native Americans and Europeans not only had very different thought about ownership and property, but they also have very different ideas on who was entitled to what.

Property & Ownership

One of the Native customs that truly astounded arriving Europeans was their system of property ownership. Native Americans generally had few desires for material possessions. The semi-nomadic lifestyle of New England Native Americans made having few possessions a necessity. When you have to frequently carry everything you own, you value mobility and weight over accumulation. As a result most New England and Great Plains Native Americans had few possessions that could not be quickly replaced. Furthermore there was a communal sense of ownership to many things that European settlers did not understand. This is symbolized by the lack of fences and official boundaries in the Native American cultures of New England. Land was not bought or sold, it was held as a common commodity that all in a tribe had a stake in. In many native cultures, if you worked part of the land by hunting or farming it, then you were entitled to share in the bounty it produced. The difference in property rights in Native American culture and our own may be an interesting point of discussion for students to examine. Ask students to examine which system is fairer? What would be the disadvantages of a system like that? What is better or worse about our own system where individuals own property? This system obviously caused confusion when bargains were struck between Native Americans and Europeans. Europeans would often consider land they purchased to be exclusively theirs. This did not fit with Native American conceptions of what property was though and many conflicts arose out of this disconnect. At any rate contracts between Natives Americans and Europeans were rarely honored very long, and forced removal from lands at gun point or after conflict was a common theme in the years that followed European settlement of New England and the rest of North America.

Values & Work

Immediately upon reaching New England and settling into small communities Europeans started to fence off the land they were using, and claimed ownership of the land regardless of what Natives were using the land for. This pattern repeated itself all over the New World as Europeans displaced Natives first through disease, and then through armed force. As Europeans did this, some tried to maintain that their land grab was in fact legal under their code of laws. As described before Native Americans had little that was permanent. Their villages could be easily moved, and their planting fields were used only as long as the soil produced. Large fields were not cleared and fertilized for years to keep soil productive as was done in Europe. Further

alienating these two cultures, settlers arrived with a Protestant work ethic that demanded working to improve the land in ways they saw fit. To them it was their ordained duty to bring civilization to a land left virgin and untamed by its previous inhabitants. Thus many colonies had laws dictating that colonists could use Indian land as long as Indians had not made improvements on the land. This generally meant that unless Native Americans were currently living on a piece of land, that it was up for grabs by colonists. It mattered little if a piece of land was within a tribe's ancestral or historical borders as long as they had not "improved" the land. Further confusing the situation was the fact that changes brought to the land by Native Americans often mimicked natural changes. The controlled burns of forest that aided in farming and hunting looked like natural happenstance to Europeans who did not recognize these Native "improvements" to the land. So land was often stolen from Native Americans with little regard for how they had used the land in the past.

The Protestant work ethic that European settlers brought with them also skewed their view of Native American lifestyles. It was common for Native American women to do most of the farming for a community, something that struck Europeans as incredibly odd. In Europe hunting was considered more sport than necessity, and thus they viewed Native American men who hunted frequently as lazy and irresponsible. As we studied Ache hunter gatherers in our seminar I was reminded of how Native American men would lead week long hunting parties in search of game, even though the majority of a communities food was produced by farming. It was interesting to learn how people who live close to the margin of survival often value protein more than starches from foods like corn, and are often willing to expended large amounts of energy to get protein supplies. (Hill 1987)

Furthermore, according to Optimal Foraging Theory all organisms will acquire necessary nutrients by the most efficient means available to them. The necessity of both protein and carbohydrate nutrients forced decisions upon these two societies. Europeans in a sense grew their own protein supplies by keeping livestock on their farms. Had they not had such a constant protein supply, it is doubtful that they would have looked down upon Native American methods of acquiring protein. To summarize, both Native Americans and European colonists had a system that provided both carbohydrates and protein calories as efficiently as was possible in their societies. Initially Native Americans enjoyed better success than Europeans, as proven by the few accounts of starvation among Native Americans before the arrival of Europeans. Once Europeans with their beliefs in definable borders arrived, Native hunting methods were quickly made impossible by limiting the areas where they could hunt.

We also learned in our seminar that there are inherent trade offs that organisms and thus people make when deciding how to feed themselves. Europeans had the tradition of storing surplus foods for the winter months, while Native Americans did not. To Europeans who had superior shelter, and clothing that could be easily layered to keep warm in winter months, storing food and working on things besides food production made sense. To Native Americans winter was a time of regular fasting and little activity. They would survive the lean months of winter not by storing food away, but by reducing their activity levels, and thus conserving energy. Native Americans simply made the choice to limit activity and conserve energy, while Europeans focused more on conserving food supplies so they could continue working through the winter. These two different responses to abiotic factors were equally effective, but Europeans viewed the Native American response as foolish and blamed a poor work ethic on the part of the Natives as the culprit. This lack of respect for native survival strategies further led Europeans to feel justified in taking native lands and changing it to suit their needs.

To sum up, we learned in our seminar that two organisms cannot live off of the same supply of resources indefinitely. In the face of competition for resources and food supplies the more efficient resource gatherer will

out harvest and dominate the other species. This has been the great motivator of evolution, change over time to adapt to new circumstances and forms of competition. In this sense Europeans and Native Americans proved to be no different. For a short while they both occupied the same habitat and competed for resources through the use of land. With the death of so many Native American to European diseases, the disrespect and disdain that Europeans had for Native traditions and borders, and the superiority of European weapons there is little doubt why Native Americans were out competed Europeans. This is not Social Darwinism, because it does not entail the allusions to racial superiority that are typically present in Social Darwinist theory, but it does speak to the fact that alien cultures will rarely coexist peacefully. It is this tendency for violence within our species that leads to power structures of dominance that are common place in human society. Students must be made to evaluate and judge these power structures by looking at how Europeans came to dominate Native American cultures.

Modern Land Uses

Because history is most useful when applied to the present students will examine modern land uses in this unit, and make judgments about them. The examples of modern land use that are mentioned here are not meant to be exclusive and any other land use could be substituted. I have tried to pick land uses that are regionally important and also controversial in some way. I want students to evaluate these land uses on whether or not they are ethical, fair, and necessary. It is important that students make judgments on these land uses as opposed to just reporting on them. Putting students in the role of decision maker will help them to understand the real world implication of what they are learning about, and will give them some ownership of their learning. Students will be asked to focus on the tradeoff between implementing the land uses and not allowing them. They will be graded on a rubric included with the assignment.

Land uses to be researched by students

- 1) Aquaculture (fish farming)
- 2) Landfills
- 3) Highway construction
- 4) Short term insect control by pesticide spraying
- 5) Soy bean farming in the Amazon Rainforest
- 6) Damming rivers for electrical power
- 7) Cutting forests for lumber
- 8) Nuclear power plants
- 9) Coal Mining

Lesson Plans

Day 1:

Topic: Introduction to the unit: What is Colonialism and what areas are we talking about?

Rationale:

To study Colonialism and Native American cultures students need to be able to use certain low frequency words associated with the time period. Also students should be able to identify on a map the areas they will be learning about. This will lay the groundwork for the rest of the unit.

Materials Needed:

- 1) PowerPoint presentation of vocabulary definitions. (optional)
- 2) Map of New England with political borders for each student.
- 3) Transparency Map of New England with political borders.
- 4) Overlay transparency to draw areas where certain tribes lived.

Objectives:

- 1) Students will be able to identify all the New England States with 100% accuracy, and locate where important tribes were located in the region.
- 2) Students will read and copy definitions of vocabulary terms from a PowerPoint presentation.
- 3) Students will analyze the causes of why Europeans came to the Americas as colonizers.

Do Now:

I start all my units with a KWL to help the students guide me in what topics to cover. Have students describe what they already know about colonialism and what they want to know.

Procedure:

- 1) Have students complete and hand in KWL. (5min)
- 2) Notebook work (Note taking skills addressed)
 - a. (5min) Describe in short section of notes outlined on the board what colonialism was. How it was a system set up to benefit European countries. That its goals were to make money and to increase the power of a country. Give example of England, Spain, France
 - b. Have students copy vocabulary definitions from interactive PP Presentation (10-15min)
 - c. Vocabulary List: 1.colony 2.adapt 3.nomadic 4.agriculture 5.environment 6. fitness (ability to survive and reproduce) 7.land use 8.epidemic 9. value (v) 10 ethics
- 3) Map work (15min)

- d. Pass out a map of New England to each student. And have them help each other with labeling each state on the map.
 - e. Have transparency of same area and after students have worked on done their best labeling the states show your transparency on the board.
 - f. Then overlay 2nd transparency with geographic areas of different New England tribes. You can make this map as detailed as you want. Include as many tribes as you see fit. I will include the Mohegan, Narragansett, Wampanoas, Cowasuck, Quinnipiac, and Wabanaki
 - i. Tribal land map at <http://www.nctc.com/~cheyanne/page7b.html>
 - g. Inform students they will be quizzed on state names and tribal locations later in the unit.
- 4) Conclusion :
- h. Ask students in the class questions about what was learned for the day.
 - 5) Homework: Use each vocabulary word in a sentence correctly.

Day 2:

Topic: The meeting of two cultures: Native Americans & Europeans

Rationale:

This day's lesson will focus on the conditions that led up to the meeting of these two cultures. The lifestyles of these two cultures will be discussed and students will be asked to predict the outcome of this meeting.

Objectives:

- 1) Students will be able to describe/ compare and contrast Native American and early colonist culture
- 2) Students will write down a description of the 1st thanksgiving, and compare that to What we learned today at the end of class.
- 3) Students will predict what happened when these two cultures met.

Do now:

At the beginning of class have the students spend 5-10 minutes writing down what they know about the first thanksgiving? Ask them question about how the two parties got along? What foods were eaten?

Procedures:

1) Notebook work (15-20 min) Use Web diagram to highlight the differences in these cultures.

Native Americans

- a. Describe to students in organized notes how a Native American village was owned communally. Women farmed & men hunted.
- b. Describe hunting/ and farming methods noting how this allowed for a semi-nomadic lifestyle. (Few possessions) Highlight changes such as controlled burning that N. Americans brought to the land.
- c. Use of multicrop fields, that did not require clear cutting.
- d. Describe N. American methods for wintering. Little activity/ and few food surpluses saved from the growing season. Explain there are two ways to survive food shortages. Conservation of energy or finding/saving new food sources.

European Colonists

- a. Religious work ether that said hard work was the path to heaven.
- b. Focused on "improving" and harvesting what the land could provide.
- c. Relied heavily on livestock for work and food, describe colonist farming methods. Clear fields to grow one crop at a time.
- d. Question: Why couldn't Europeans understand why N. American men let the women do all the farming? What do you think they thought of N American methods to survive the winter?

2) Create a worksheet that allows students to create their own Native American or Colonial Village. This sheet gives the students a chance to draw what they think a N. American and a colonial village would look like. Villages should reflect the class discussion in terms of accuracy. A 6x6 grid overlaid with streams and forest could be a simple example of this worksheet. Students should hand in for a class participation grade.

3) Homework: Have students complete a one paragraph writing assignment on their predictions of what will happen to these cultures and the land they control when they meet. Discuss responses for starting activity the next day.

Conclusion:

Have students predict whether or not these two cultures would get along once they met each other? Which society would be more productive? Which society would be better able to compete? Compare their comments from this discussion to what they wrote about the first Thanksgiving from the beginning of class. Do these predictions describe what would happen at the 1st Thanksgiving? Discuss....

Day 3 Diseases & Land Use

Rationale:

The purpose of this lesson is to show the impact of disease upon Native populations of the Americas.

Objectives:

- 1) Students will analyze the effects of epidemics upon Native American populations by simulating how a disease can spread.
- 2) Students will discuss their responses to the previous night's homework in a guided classroom discussion.
- 3) Students will complete a short quiz on the vocabulary and teacher selected topics already covered in the unit. (optional)

Materials Needed:

- 1) Clear plastic cups for each student. Filled $\frac{1}{4}$ full with water or acidic solution.
- 2) Various colors of food coloring to color the water
- 3) Paper Towels for clean-up
- 4) Vinegar or lemon juice
- 5) Litmus Strips

Procedure:

This game simulates a tribal council meeting of a New England Native American tribe after one tribe member has come into contact with a white person carrying Smallpox. The purpose is to show how quickly infections spread among and killed Native Americans who had no immunity to Smallpox.

- 1) Explain situation and simulation to students
- 2) Have class appoint a student "Chief" for the tribe.
- 3) Have all the students take a cup filled with colored liquid. Make sure at least one or two students take a cup filled with either vinegar or lemon juice.
- 4) Let students talk and move around the room for 5-10 minutes. Have them record each person they talk to on a sheet of paper. Tell them they must all talk to at least 10 people to get credit for the activity. Having them record who they talk to assures that students will mingle sufficiently to "spread" the smallpox.
- 5) Instruct students that whenever they talk to another member of the tribe, that they must drop 6 drops of the liquid from their cup into the other tribe member's cup.
- 6) After the students have talked for a while. Give them each a litmus strip and a pH indicator. Have the students record the pH of the solution in their cup.

Discussion:

After students have recorded their pH explain to them that those students whose pH is lower than 7 have contracted smallpox. Explain to them the simulation and what it was intended to show, and be sure to point out the student who had the smallpox virus originally. Explain that typically the death rate associated with smallpox is about 30%, but that in many Native American villages the rate was often 80-90% of the population. Have students calculate how many students would have died in the class if everyone got smallpox. Physically separate these students to one side of the room for effect. Ask students what would happen to a culture if 90% of it died off in a month. Would it still exist? What would its chances be to defend itself from its enemies? What happens if the student "Chief" were to die and the tribe was left with no leadership?

Notebook work:

Have students take notes on the "Guns, Germs, Steel" concepts explained earlier in the narrative. Explain this is what people who study social studies think determines what cultures thrive and which die out. Relate these notes to the in class activity, and to that fact that not only were Native Americans killed off in huge numbers by smallpox and other diseases, but they also faced a culture which had superior weaponry and technology. Use the previous night's homework to see if student predictions were right.

Days 4-6

Conclusion of the unit:

The last two days of the unit will focus around a student research project, where students will research a modern land use. They will complete a series of questions on the land use, and will be forced to evaluate it for its necessity and fairness. They will have to judge its value to society versus the environmental cost that is associated with the land use. Students will be given one day to research the land use, and create a short presentation on its pros, cons, and necessity. They will also have to judge for themselves whether or not they

themselves feel the pros outweigh the cons or vice versa.

Day 7

Possible Field Trip:

Possible field trips include a visit to the Mashantucket-Pequot Museum in

Assessment

Assessment for this unit will be based on three grades a quiz, a presentation, and a major paper. The quiz will be designed to test the factual information learned about the Native American Civilizations of the Pre-Columbian Americas, and its contact with Europeans. The research presentation will make students research a particular land use such as corn farming, strip mining, or river damming, and have them judge the ethics, fairness, and necessity of these land uses. The essay will be styled in the CAPT persuasive essay format, and will force students to take a side either for or against the Kyoto Accords. For the CAPT style essay the students will need three non-fiction articles to read and get background information on. The teacher can either find three reading level appropriate articles from the internet or other media source, or they can write their own articles. I have used both methods and find that writing my own non-fiction articles to be better for the students. By writing the articles myself I can assure that the reading samples are on grade level. Both the presentation and the paper will have a teacher designed rubric included with them for the students.

Annotated Bibliography

Cronon, William. *Changes in the Land: Indians, Colonists, and the Ecology of New England*. Hill and Wang. New York. 1983. By far the most well read work on this subject. An invaluable source for anyone interested in the topic of Native American and Colonial land uses, or the time period in general.

Crosby, Alfred. *Ecological Imperialism: The Biological Expansion of Europe 900-1900*. Cambridge University Press. Cambridge. 1986. Easy to read book with a lot of pertinent information on disease ecology, and the destructive qualities of disease.

Diamond, Jared. *Guns, Germs, and Steel*. Norton and Company. New York. 1997. Popular book on the NY Times best seller list. Large, but very interesting book that does a good job at making the reader think about why history happened the way it did. Its wide appeal to many different readers explains its long stint on the best seller list, but there is a great deal of important information to be learned from this book.

Foster, David "The Importance of Land-Use Legacies to Ecology and Conservation" *Bioscience*. January 2003. Vol. 53. A scholarly article with insights on Native American land uses in Central America.

Hill, Kim. Hillard Kaplan, Kristen Hawkes, and Magdalena Hurtado. "Foraging Decisions Among Ache Hunter-Gatherers: New Data and Implications for Optimal Foraging Models" *Ecology and Sociobiology*. Vol. 8: 1-36 (1987) A scholarly article assigned as reading in our seminar. This work explains Optimal Foraging Theory in detail, discussing how organisms, (Ache Hunter-Gatherers of South America in this case) make economic decisions regarding when and how to forage for food.

Special Thanks

Oswald Schmitz- Seminar Leader

Pedro Mendia- Seminar Coordinator

Endnotes

1. Diamond, Jared. Guns, Germs, and Steel. Norton and Company. New York. 1997. p37
2. Foster, David "The Importance of Land-Use Legacies to Ecology and Conservation" Bioscience. January 2003. Vol. 53. 1 p79
3. Cronon, William. Changes in the Land: Indians, Colonists, and the Ecology of New England. Hill and Wang. New York. 1983
4. Cronon, 48
5. Cronon, 49
6. Cronon, 43
7. Cronon end of season chp
8. Cronon 79
9. Cronon 120
10. Cronon 121
11. Crosby, Alfred. Ecological Imperialism: The Biological Expansion of Europe 900-1900. Cambridge University Press. Cambridge. 1986 p.39
12. Cronon p.86
13. Cronon p. 89
14. Hill, Kim. Hillard Kaplan, Kristen Hawkes, and Magdalena Hurtado. "Foraging Decisions Among Ache Hunter-Gatherers: New Data and Implications for Optimal Foraging Models" Ecology and Sociobiology. Vol. 8: 1-36 (1987)

<https://teachersinstitute.yale.edu>

©2019 by the Yale-New Haven Teachers Institute, Yale University

For terms of use visit <https://teachersinstitute.yale.edu/terms>