Trends of Human-Environmental History in Central Massachusetts

Pre-Settlement Period

(60,000 before present - 1600)

**Major Trends:**

**Human:**
Humans arrived in North America during the Pleistocene Epoch via Bering Strait. Nipmunks of Native Americans settled down in areas near Central Massachusetts. Subsistence economy evolved as the climate warmed and the forests changed.

**Environmental:**
Wisconsin glaciation shaped soil formation and vegetation development of the region. Retreat of the glaciers configured Worcester Plateau into rolling plains fed by innumerable streams.

**Ancillary Trends:**
Prescribed fire for game management and small scale agriculture were undertaken by aboriginal people, primarily in settled areas. The pattern and dynamics of landscape were mainly controlled by variations in landforms, topology and drainage and the process of natural disturbance, in combination with landscape modifications by Indians.

**Landscape Implications:**
The retreat of ice age left a great part of Worcester area in a transitional ecological zone, with northern forest species overlapping with the central forest, which extends to the mid-Atlantic states.

The land was rocky, often sandy, and not fertile (except toward the west in the lower Connecticut Valley). Landscape showed considerable temporal and spatial variations in the mixture of and distribution of species and the pattern of vegetation.

**Notable Events:**
Early Contact Period
(1600-1764)

Major Trends

Human:
European settlers arrived in the coastal areas, making Worcester area a “frontier wilderness.”
Repeated expeditions were launched against the Indians. King Philips War confiscated much of the remaining Native American lands.
Colonial government granted land to groups of individual “proprietors” to establish settlement.

Fur trade emerged as early commercial enterprise.
Primary sustenance included agricultural crops, livestock grazing, fishing, shellfishing, hunting.

Environmental:
There were signs of early disturbance to wildlife communities (particularly fur-bearers).
Epidemics introduced by European settlers caused major displacement of Native American population.

Ancillary Trends:
Early livestock grazing, and draining and filling activities occurred in certain sensitive lands (such as wetlands), probably in eastern parts of the area.
Local-scale exploitive operations (sawmills, iron ore production etc.) in eastern parts of the area might have left footprints on the landscape.

Landscape Implications:
The mosaic of diverse habitats support a wide range of plant and animal species, offering new European settlers both challenges and opportunities.
The landscape probably supported abundant mature forested uplands and swamps.
Clearing of forested lands may be noticeable but only in a few selected areas; vast tracts of unaltered land were present.
There was very minimal stream alteration (although beaver dams may have been significant).
The hydrological regime is probably prevalent with low-nutrient, low-sediment transport, and cold-water streams.

Notable Events:
First settlement attempt at Worcester, King Philips’ War.
Colonial Periods
(1665-1775)

Major Trends:

Human:
Many "frontier towns" emerged, serving as outposts for settlers as well as springboard for new interior settlements (to the north and the west). Clearing wood lands (by felling and burning, for shelter, agriculture and husbandry) spreads around interior settlements. Clearing was typically undertaken between early spring and onset of winter. Crops of corn, grains, beans, squash, and other vegetables were planted among the stumps on burned-over land. Commercial and industrial expansion added momentum to the rapid settlement of new communities, some spurred by speculation. The bulk of the new homesteads were situated mainly along the major streams. Soil suitability for agriculture was one of the major factors in selecting sites for clearance. Primitive road networks began to emerge, though water remained important for transportation.

Environmental:
Charcoal, potash and forest leaf litter constituted valuable fertilizer from the forest for farm crops. Little thought was given to conserving wood or wildlife, as these resources appeared to be inexhaustible. Many wildlife species (deer, game animals, fur-bearers, particularly beavers) were greatly reduced, some nearly eliminated.

Ancillary Trends:
Plowing and exploitive agricultural practices were likely to have long-term impacts on soils and future vegetation. Agricultural expansion and diversification of trade made communities more self-sufficient and thriving; some later developed into urban centers. High cost of overland traffic remained major deterance to urban growth.

Landscape Implications:
The wilderness was gradually transformed into a domesticated rural landscape. Increased loss of forest lands to support agriculture became a prevalent sign of landscape transition. Permanently settled areas features small houses, surrounded by cleared fields, small pastures dotted by an assortment of domestic animals. Probable increase in stream alteration from sawmills and furnaces. Local mining of rocks and bog ore may have some ecological impacts. First land survey was conducted in Worcester.

Notable Events:
Incorporation of Worcester (1722); settlement and incorporation of majority of Central MA towns; French and Indian War (1756-1763); Massachusetts provincial census of 1763; Sugar Act of 1764; Stamp Act of 1765; Townsend Act of 1767; Tea Act of 1773;
Federal Period
(1775-1830)

**Major Trends:**

**Human:**
- The regional "frontier" was finally closed.
- Agriculture and widespread local and home industry became the foundation of local economy.
- Economic activities were further diversified and differentiated across the whole region, supporting a wide range of farmers, traders, and artisans.
- While farming had approved infertile, other new demands for the wool from sheep farms, for house furnishings, and for fuel from infantile industries and upcoming wood-burning railroads kept the pressure for deforestation.
- "New cities" emerged with the spread of a system of canals and improved roads.

**Environmental:**
- The great portion of the land was cleared for pasture, tillage, orchards, and buildings.
- Most of the cleared land supported grazing animals while only a small portion was actively plowed for crops.
- While many populations of native wildlife (wolves, cougars, deer, moose, etc.) were further reduced, open-land species (Bobolinks, whippoorwills, meadowlarks, skunks, foxes, and rabbits) grew with expansion of young forests.
- Dam building wrought havoc to certain populations of aquatic species.

**Ancillary Trends:**
- A distinctive regional cultural landscape took form, with its own dialect, town morphology, and folk architectural style.
- Industrial development in many places were hindered by a lack of water power.
- Toward the end of this period, many places witnessed a shift from agricultural to industrial economy.

**Landscape Implications:**
- Cutting, burning and grazing of remnant forest areas greatly changed their composition and encouraged the secondary growth of new tree species.
- The whole area became fairly evenly populated with townships of 500 to 2,000 people.
- The landscape was crisscrossed with close network of stone walls and piles of stone thrown together within the clearings.
- Modifications of flow regimes for industry and transportation were visible part of landscape transition in many places.

**Notable Events:**
- Auburn, Sterling, West Bolyston, Milbury, Southbridge incorporated (1778-1816); Declaration of Independence (1776); Massachusetts Constitution Convention (1779-1780); Slavery abolished in MA (1781);
- first public road built in Worcester (1783); Shay's Rebellion (1786-1787)
- Boston incorporated (1786); leather industry in Shrewsbury (1786); Slater mill built in the Blackstone valley manufacturing in 1790; first turnpike corporation in MA chartered (1796); Stafford turnpike built (1806);
- Merrimack Manufacturing Company incorporated (1822); First railroad (horse-drawn) built in Boston (1826); the Blackstone Canal opened (1828);
**Early Industrial**
**(1830-1870)**

**Major Trends:**

**Human:**
- Industrial Revolution introduced large-scale manufacturing enterprises that produced textiles, papers, and machinery.
- The network of canals, and then of railroads weaved the region solidly into the national fabric.
- Farming finally reached its peak and then began to decline, with an irreversible shift of farming activities to the South and the Midwest.
- The city of Worcester became the region's railhub and major manufacturing center, with the advent of steam power and the opening of the Blackstone Canal.
- Continued growth of human population fueled by influx of new immigrant workers concentrated mainly in industrial towns, while rural population remained static.

**Environmental:**
- A new wave of clearcutting swept across the second growth pine forests as source of wood for packing boxes to contain the products of the new industrial economy.
- Introduction of coal for heat and industrial uses and importation of lumber from other parts of the country enabled by railroad helped ease the further pressure for deforestation.
- Incidents of industrial pollution, public health problems and accidental fires near railroads increased.

**Ancillary Trends:**
- The discovery of gold in California, the Civil War, and the construction of Erie Canal and the railroads that made agricultural products more accessible all added to the farming decline.
- Much of the rapid industrialization occurred in places favoured by water or rail transport systems.
- Many people moved to richer soils in the Midwest or factory jobs in the cities.
- A new labor force from Ireland and eastern Europe caused major demographic transition, finally forcing the traditional Protestant religions to share their authority with Roman Catholicism.
- Newly constructed Blackstone canal was soon bypassed by railroad.
- Urban centers grew from being essentially one of marts and warehouses to "modern cities" serving social, educational, or religious functions.

**Landscape Implications:**
- As marginal farms began to be abandoned, the old fields quickly grew up into dense stretches of white pines.
- Deforestation reaches its peak toward the end of this period, through the clearcutting of second growth white pine forests.
- There were potential impacts from increased recreational use of ponds and lakes resulting from increased railroad access.

**Notable Events:**
- Worcester-Providence rail opened (1835); western railroad completed (1839); City of Worceter incorporated (1848); envelop-making machine created in Worcester (1853); steam calliope invented in Worcester (1855);
- Elm Park built (1854); Massachusetts court reform (1859); Worcester Park Commission created (1863); Massachusetts Board of Railroad Commissioners created (1869);
Late Industrial
(1870-1915)

**Major Trends:**

- **Human:**
  - Decline of agriculture and rural population continued under the pressure of competition from the larger Midwest farms, which were more amenable for mechanized farming practices.
  - Expansion of old urban centers were accompanied by development of new urban areas; early signs of suburbanization became visible.
  - General consolidation trend, increasing density and expansion of villages near urban areas, and decreased activity within peripheral areas.
  - The convergence of rural and urban modes of life.

- **Environmental:**
  - Factories and sewer systems discharges concentrated flows of waste into streams.
  - Trash accumulated in local dumps.
  - Coal-burning stoves and boilers created choking clouds of soot and smog.
  - In reaction, America's first environmental consciousness emerge around 1900.

- **Ancillary Trends:**
  - Electrical power grids established in urban areas, and stream power declining.
  - Signs of new urban morphology (such as "three deckers" and "diners").

- **Landscape Implications:**
  - More farmlands were abandoned; forest regrowth began to reclaim the abandoned farm fields.
  - Degradation of water quality continued due to expanding urban areas, as well as impacts from silver and shoe industries.
  - Sewage systems.
  - Alteration of wetland habitat from cranberry agriculture.
  - Forest began to reclaim old fields and pastures.

- **Notable Events:**
  - Massachusetts Board of Health created (1869); Fishburg incorporated as city; Hoosac Tunnel completed (1875); First telephone communication in Boston (1877, in Worcester [1879]); electric trolley installed in Worcester (1883); the country's first commercial electric plant opened in Great Barrington (1886); Hopedale incorporated (1886); first gasoline-powered auto in US produced in Massachusetts (1892); Mass Auduborn founded (1896); electric streetcar linking Fishburg, Leominster and Gardner built (1900); Wachusett Reservoir constructed (1905); Weeks Act (1911); state government reform (1911)
Early Modern
(1915-1940)

**Major Trends:**

**Human:**
- Internal-combustion engine became a major agent of socio-economic and cultural change.
- Improved and expanded state and federal road network as a response to economic crises and decline in rail lines.
- Lost urban industrial base (and tax base) leads to decline in services, resulting in urban decay and increased suburbanization.
- Significant growth in agricultural production, dairy poultry, cranberry cultivation.

**Environmental:**
- New deal gave state conservation a major boost.
- Construction of Quabbin Reservoir may have deterred westward urban expansion.
- Secondary growth of forest continued to claim the abandoned farmlands.
- With second growth, many native wildlife species almost eliminated before returned, together with some new species.
- Decline in stream alteration from small scale industries.

**Ancillary Trends:**
- The recreational value of forested land.
- Decline of traditional industries (such as textile and stationary) began.

**Landscape Implications:**
- Widespread reforestation of abandoned farms and declining forestry.
- Decline of Eastern Chestnut as a major forest tree, due to blight.
- Return of many wildlife species made a richer and more diversified natural landscape.
- 1938 hurricane levels much of the forested landscape.
- Worcester emerges as urban-rural division between east and west Massachusetts.

**Notable Events:**
- Leominster incorporated as city (1915); the newest MA town East Brookfield incorporated (1920); Ice storm of 1921; the Metropolitan District Water Supply Commission created (1926);
- construction of Quabbin reservoir (1936); construction of Route 128 (1937); Hurricane of 1938;
Late Modern Period
(1940-1970)

**Major Trends:**

**Human:**
The regions’ once flourishing manufacturing industries desert the region for locations elsewhere.
The rural and small-town population grew at a faster rate than the metropolitan population, the so-called metro-nonmetro turnaround.
Continued growth of commercial corridors including limited access highway construction (from 1950’s to 1970’s), with development clusters at access points replacing the linear commercial strips of older highways.
Single family homes on large lots accelerates expansion.
A vast system of interstate highways has been constructed to connect major cities in a single nonstop net.
Decay and abandonment of older urban areas accelerated.

**Environmental:**
Highway construction led to expanding suburbs.
Suburban expansion, primarily in towns near urban centers, and dispersed unplanned growth along access corridors; lower Worcester plateau were most affected.

**Ancillary Trends:**
Decline of local crafts and regional peculiarities.
The highway has become the central route, and many of the functions once confined to the local town or city now stretch for many miles along major roads.
Development of second homes, resort areas, and year-round residence in seasonal cottages.
Decline of dairy industry.
Widespread construction of utility lines for power, gas, and communications.
The city dweller became the dominant consumer for products other than those of field or lumber mill.
City location tends to determine patterns of rural economy rather than the reverse.
Widespread use of pesticides for mosquito control and agriculture.

**Landscape Implications:**
Open and agricultural lands and newly forested lands converted to urban use.
Loss of early successional habitats.
Increase in invasive plan species, particularly in successional old fields.
Increase in nutrient blooms and weed problems (including invasive aquatic weeds) in ponds, lakes and streams.
Drying of aquatic habitats due to reforestation and water withdrawals.
Reduced forest cutting and wetland alterations due to regulations.
Increased habitat fragmentation due to high-use roads.
Pesticide impacts on invertebrate fauna; may have contributed to decline or loss of many species;
fields and pastures abandoned by farmers have grown over into forests, leaving toppled stone walls and root cellars as reminders of colonial agricultural history.
Forest fragmentation

**Notable Events:**
Urban Redevelopment Corporations authorized (1944); filling of Quabbin Resevoir completed (1946); Worcester government reform (1949);
MA Turnpike Authority formed (1949); Tornado of 1954; Blackstone flood of 1955; Massachusetts Bay Transportation Authority founded (1964).