Historical Chapter – With Focus on Mapping 1850

Outline Notes 3-02-2012

Broad sweep of NE history – settlement, population increase with associated deforestation for farming and further homestead establishment, leading to a peak in mid-19th C when greatest extent of deforestation occurred and largest impress of man's activity felt on the land.

Critical to know this period – physical nature of the land and human activity as it conditions the landscape so strongly down to the present – in terms of subsequent human activity and ecological processes. Soils influenced, artifacts created, vegetation composition and structure shaped, locus of activity for subsequent human activity as subsequent generations use old structures, follow old roads, modify existing fields etc. Details of primary vs secondary forest, legacies in ecosystem processes, etc.

Subtle to undertake as 150+ years, with farm abandonment much hidden, subsequent activity much is modified.

Would like a snapshot of that time akin to Google maps to explore – the arrangement of roads, the location of houses, the extent of forests and positions of coastlines and conversely, the patterns of fields and their uses as well as the features like fences and stonewalls that bound them. How was nature organized and how had two centuries of human activity altered its structure and its function.

Ecologists and historians get at this in various ways.

Journals – greatest example is Henry Thoreau and his insights. Both physical description and interpretation of the land and its processes and people.

Maps – Massachusetts fortunate - have tapped into the serendipitous production of the 1830 maps – nearly statewide coverage, town by town showing roads, woods, mills, streams. Variable by town and region as basic standard but highly varied approach. Some towns missing, some woods clearly missing, many clearly caricatures of actual shapes. Geometric control is highly uneven and oftentimes poor – use rubber sheeting to fix.

History Chapter – Ideas – July 2012

Forest
Dominant forest cover today – dominate throughout pre-history; most intact part of the landscape. Undervalued and appreciated; not hot spot; not heavily disturbed diverse areas. Low diversity; studies emphasize rich forest.

How did forest recover so fast? Mechanisms? Generalities? Use for restoration?

Ho – Ancient woods even-aged; former woodlot; oldest trees; sprouting clumps – similar age.

Ho – Vast majority early 20th century as ↓ farms, ↑ forest, ↑ coal. Where are stools?

Comparison – 1850 and today – specific details: West Tisbury tilled fields, forest patterns Tisbury Great Pond; alternatively highlight little change and great change.

Global role of forests.

Forest recovery – stab by H. D. Thoreau = Succession. Pitch pine into fields as advanced guard of sentinels followed by oaks dispersed by squirrels, jays, pigeons; works broadly but many areas lack pines; pure oak and short time.

Importance of history? Differences in forest. Accommodate with conservation. Why big intact areas? Vines? Open woods. Pitch pine. Fields.

Clues to land-use history – sprouts, stools, growth forms; size; understory; invasives; artifacts; blow down; fire.

Forest types – Beech; oak-Huckleberry; oak-Huckleberry with scrub oak; pitch pine-oak.

Forests – Have history, inertia and trajectory, future; knowing history, understand trajectory, anticipate future; interact with environmental change; interject this in management and conservation.

What was pre-settlement forest and how was it changing? How has 400 years of history altered this? What is modern trajectory and what will change this in the future? What guidance does this provide?

General mesophication of forest since 1900 as tree species increase that were more common in the past.

General Themes

Details affecting land use: agriculture, mills, sheep, roads, disturbance, settlement pattern; processes important for conservation.

Martha's Vineyard versus base of Cape – land cover, houses, barns, fences.

Points in Time – Breveton, Abundance; H. Thoreau – cutting it all down; Pete Ogden – no forests; Steinbeck; McKibben.

Associated wildlife dynamics.

Local story with regional to global reverberance; era of change; completely forested; ruthlessly settled and deforested; peaked and reversed; commonplace features still exceptional – stonewalls, cellar holes, borrow pits; wholesale change primitive to agricultural to industrial to cosmopolitan; greatest environmental story in America – McKibben.

Further Ideas
Connections

Katama Bay and Mattakesett Bay to Edgartown Great Pond

West Tisbury to Edgartown via Dr. Fisher's Road – water power

Chappaquiddick to Martha's Vineyard via Swimming Place.

Nantucket to Martha's Vineyard for whaling – place of home for captains and some crews; unloading site for cargo in bad weather.

Martha's Vineyard – mainland for wood.

OB → Edgartown Great Pond RR

Landscape for dispersal of oaks.

History of connections and movements of material, people, animals. Some enduring, most not, some like rail road highly transient; some like Chappaquiddick to Edgartown ephemeral and reoccurring.

Legacies and Inertia

Management – learning from the past; learning what nature does and what it can do; work with the possible; retain/restore – not quite the right words – keep aspects of the past versus force nature into something novel, untested.

Tree forms – legacies of the past; moldering relics; transient forms. Quansoo, Menemsha Hills, Spring Point, etc. – magical trees – short, broad, extending, contorted – surrounded by taller, straight trees.

Cedar Tree Neck – Sassafras contorted, compact, shaped.

Wasque Pines – wind and salt shaped.

Naushon – Beech – tiny to immense; contour - fit oak and beech. Uproots – branches from new stems, linear shoots – confined to a small range of species? Red Maple, beech not oak, pine – so more prevalent on Naushon than Martha's Vineyard.

Legacies/Inertia – Interaction of processes operating on multiple scales. Menemsha Hills – leaves on ground from last fall, wood and dead trees from 2006, contorted trees from the 19th century, hills from 20K BP, erosion over millennia, and cart path from 18th century. Processes interact. Must know all, formation, decay.

Adjacent all these areas – extensive grasslands – where are they from? Big field at Seven Gates – surrounded by woods – assumption that the field came from forest. Katama big field near the ocean and surrounded by open suburban landscape, pond, low woods – question whether ancient – same on Nantucket - context dependent.

Where did fields come from? When Thomas Mayhew arrived – woodlands or open fields ringed with houses? Fields and woods finely tuned by human activity? Champlain, Cronon, Mann. Makes a difference to conservation – interpretation, attitude, management. Surely will influence how we manage.

Basic historical reality – regardless of ancient roots, over the last 350 years open lands have been maintained, expanded, shaped and conditioned by colonial agriculture – cutting., clearing, mowing, plowing, burning and grazing. The latter is especially important – upwards of 20,000 sheep, XX cattle and oxen, horses, pigs, chickens, ducks, goats.

Assumption – memory or history as far back as one can reconstruct it is the way it was for a longtime – or forever. Rare species – to first knowledge of abundance – generally 19th century. Indians to Morton, Woods, Champlain. But these were peculiar times and not necessarily indicative of long-standing conditions.

Assume because it was there it is native and more abundant.

Species on banged up, disbursed bed sites, eroding bluffs – but bluffs are time transgressive, continually moving so rare species are moving. Into former woodland.

Beech – status. Was it more abundant? Where it is abundant does it depend on unique conditions? Future increase? Constraints on it – fire, hurricanes. Factors favoring it – grazing and browsing

Inertia – once something established it is difficult to remove. Tendency to perpetuate. Pines – fluke of e.g. disturbance versus seed source allows to establish. Will grow for 200 years, producing seeds many years and scattering it, likely to perpetuate.

Intro - Manuel Correlus State Forest tree blows down or horse path through the plain; couple hundreds of yards away pine tree casts seeds that lodge on torn edge of sedge tuft and take root. One hundred and fifty years later the pines stand in a row. Today, mowing along the fire lines is yielding the same impact – pines rooted along the margins.

Future is uncertain, would like to project future responses and conditions – and yet we cannot decipher past and interpret the present. How will the land change and respond?

What should we be prepared for and act? Should we anticipate and act? Wait and see? Hope to accommodate?

Cannot find complete analogs – but partial: (1) some partial analogs, (2) range of past events and anticipate extremes, (3) evaluate reactions, and (4) examine for larger lessons – Maya – not how to do it. How did people cope in the past?

Deforestation – how extensive

Reforestation – how did it happen so quickly and comprehensively? Barren plain to dense woods, no forest to forest, scraggly woodlands to forest.

Versus Nantucket, Block Island – anecdote of red maples on Block Island – to see real trees in the forest of Amelanchier.

Less deforestation than envisioned. Many scrub areas included woodland plants and intact woodland remnants; including trees e.g., tree oaks in what looks like exclusive scrub oak.

Extent of primary woodland is important and critical. Big difference – Martha's Vineyard versus Block Island versus Nantucket versus Cape Cod and western Massachusetts.

Primary woods, roadsides, invisible woodlots, fence lines, pasture trees, shade trees, wood pastures – invisible?

Time transgressive – primary is snapshot – by 1898 – X areas lost and Y acres gained.

Secondary woodlands – Critical distinction where real – gradations of impact (soil disturbance) and original species removal. Eliminate native flora. Inertia in its recovery and re-establishment. Insertion of new flora. Inertia in its removal, decline and replacement. Competition.

Change soil conditions, biota, genetics.

Sieve – elimination of some species; addition of others; preferential enhancement; differential reduction; big nutted species – how fast can move.

Photos:	Successional cedars	Secondary woods
	Successional pine	Open oak
	Open oak in younger forest	Sprout woods
	Hurricane trees	Stools

How did heavily seeded trees recover and spread so quickly? Not old field white pine. Few dispersers – squirrels are few. Passenger pigeons? Evidence that were abundant? Jays?

Each site tells a story.

Pine distribution – what explains this?

Woodshed for major industry? Brick kiln.

Release of forest from intense and chronic pressures, old stools and many sprouts.

Areas to examine: Pitch pine, across stonewalls, very distant secondary woods; adjacent secondary woods.

Gaylusaccia clones in open pastures.

Succession begets succession → geometric growth.

Jenny: Can't decipher…. Page 15 of notes

In the mid-19th century as Henry Thoreau was walking the New England landscape and despairing about the future of its woodlands and wildlands a great transformation was commencing – agriculture in the U. S. expanded, agriculture shifted west and trees began to march across abandoned farmlands through a process that Thoreau called succession.

A century and a half later New England is predominately the most heavily forested region in the U.S., more than 80% and another grand transformation is occurring – through development and the [undecipherable] vof the predominately private ownership the forest cover is declining again and forests are being parcelized, fragmented and [undecipherable].

With recognition of this history, the value of the forest and [undecipherable] in supporting our lives, [undecipherable] and even [undecipherable] our lives, a group of citizens from across each of the New England states advanced a bold vision: that New England seize on is tradition as a leader in conservation and this second chance that history has provided and conserve more than 70% of [undecipherable].