

## Approach to Management

### Conservation - Guiding Principles

#### Pragmatic approach

Guided by science and history and addressing the needs of the earth and humans.

Manage with understanding of the past and informed by ecology. Use past and ecology to interpret present and forecast future; understanding how the environment may change and species respond – anticipate the future.

Recognize that neither history nor science provides the absolute answer.

Science and history both change (as do human behaviors). No right answer. No obvious benchmarks. Real decisions and options. Subjective and emotional is strong driver of human action, not the rationale and scientific. Don't hold conservation up to a different standard than other major decisions. We don't make our major investments – cars, entertainment, houses, charities for rational reasons.

Subjective and emotional is the strongest driver of human action, not the rationale and scientific. Shouldn't hold conservation up to a different standard than other major decisions.

No need for more research and study – not that more insights won't be useful. Continued study synthesis, updating thoughts. Reality – small, confined area – some of most thoroughly studied, evaluated and planted landscapes in U.S.

No right answer. No obvious benchmarks. Real decisions and options.

Hubris – human limitations.

Doing nothing – often a highly viable option. Doing nothing for a long time is easy for nature, difficult for people. Real distinction – active and passive management.

Mixture of cultural and natural landscapes - highly desirable

conservation, aesthetics, human nature. Cultural in nature is ok. Develop/No; harvest versus OG; salvage/no; fire versus sheep; cultural versus natural; state forest natural (??); plant; duck pond. Grasslands and Cultural Landscapes. What do we do with landscapes and features derived from past cultural practices? Reality – many cherished landscape and features derived by/from human activities or singular events. Persistent but transient. Motivation to keep them – aesthetic, romantic, historical biodiversity, science. Cannot preserve many, can restore and recreate some or at least mimic. Approach – determine historical process that created these.

Can do bold things, advance major conservation goals because they excite, intrigue, fascinate.

Great if these are reinforced by economics – tourism, environmental sustainability, economic rationale – infrastructure.

Inertia – huge effort to maintain status quo – impossible actually, but semblance is huge effort.

Priority: land protection

Security – options, flexibility, buffer trails; species habitat and connectivity; financial hedge; water. Pragmatic – conservation restrictions, work with land owners, their history, experience, knowledge and ability to work the local land. Protect large blocks and critical connections – (include

underdevelopment) for nature and people so includes access. Need for intact blocks, less management. No mystery what these parcels are, but many priorities – trails, beech access, habitat and much overlap; specific management concerns and objectives.

## COMPLEMENTED BY

Smart growth. Complements and reinforces the zoning and effort to be more efficient in construction, energy use and transportation. Focused development and zoning, e.g., of commercial, industrial and residential areas and conservation to reinforce patterns and make them secure.

### Manage

In Ways that are consistent with History – Natural and Cultural  
Manage as little as necessary and in focused way.

Hubris. Nature is fine without us. Human need to respond – landowners, managers, agencies, organizations – show they are doing something, taking charge and control of the situation. Impact often much greater and unstated consequences. Any further impact accelerates, augments add.

- Prevention and mitigation – very little evidence of success. Often generate more impact than are trying to correct or prevent. Impact accelerates change and opens site to new species.
- Especially true of salvage logging – value often low and impact often great; danger often overblow and other options at less expense more warranted. Fire, bugs.

Fundamental difference – Wild vs Managed. Both cultural but significant deviation

### Wildlands – Set aside areas – Requires Long Time

Value of wild – control, legacy, research. Core, large; nature, natural process, species; recreation science; management; coordinated adjoining ownerships – bigger wildland.

Allow old forests to develop, C stored, species sort out according to natural process/prevaling conditions. Retard changes – management ups pace of change.

destination. Natural part of the landscape – very little in the New England. Examples – Pisgah, Naushon, Woods Property. Preserve existing elements – most species not killed by climate change – so will live a long time even in unfavorable climate.

Value to management; great rationale – get products from the land. Myth of preservation.

Woodlands – working lands, cultural lands.

Grazing – diversity with different regimes – different animals on different lands and over time – chickens, pigs, sheep, goats, llama, and beef. Can cover a much greater area; lots of practitioners, educational. Eliminate fuel – low fuel with moving regime as needed. No health issues, little safety concern. Replace burning with grazing – cost but effective, historical, engaging – recreation, productive; cost effective. Intense culture – greenhouses, fields.

Argument for agriculture – mow, sheep, etc.

- investment in useful infrastructure and product.
- not weather dependent – does have different efficiencies at different times.
- direct human involvement; education; year-round; classes.  
use and control of wild animals – geese, deer.

- historically accurate; not speculative as fire.
- by-product of employment and resource production.
- animals, like vegetation, are relentless.
- broaden land conservation base.
- fire speculative – abundance, intensity, size, season; no other value.
- broad base of experience in Europe to fire information.
- known success – look at history.
- Scales – anyone with a brush cutter, weed whacker, brush hog, horses, cattle, sheep, llamas can get involved; no esoteric knowledge, insurance safety.
- works in concentrated, settled areas.
- ↓ fire danger.

### **Photos – Illustrating Conservation**

IMG 4272 Aerial West Tisbury, Tisbury Great Pond – multiple options – various necks showing alternatives – pasture, shrub, forest. Succession burgeoning at the fence lines.

Basic illustrations of multiple pathways for landscapes – e.g., development, forest, grass, sand plain.

### **Conservation Examples – July 2012**

Conservation landscapes assembled.

- i. State Forest – Greenfield – Pohogonot – Pennywise – Long Pond.  
Sepsiessa – then up to Vineyard Haven through Stony Hill and Thimble Farm and to south Woodlands towards Oak Bluffs – Felix Neck – Tuthill – Morning Glory and Katama.
- ii. Chappy Trail
- iii. Western Moraine – Phillips – Ripleys – Blackwater-Norton [Seven Gates] to Central Morainal.
- iv. Coastal Ponds – Chilmark, Tisbury Great Pond [Quansoo], Long Pond and Homer’s, Edgartown Great Pond [Turkeyland], Pocha Pond, Cape Poge.

Lost Opportunity

- West Chop
- Foster’s Farm – State Road via Norton’s to Ice House Pond.
- State Forest Development.

**Fire – July 2012.** Map all sites burned in the last 10-20 years.

### **Notes on Agriculture & Conservation Management**

Foster, D. R., Motzkin, G. 2003. [Interpreting and conserving the openland habitats of coastal New England: insights from landscape history](#). Forest Ecology and Management 185: 127-150.

Department of Environmental Management (DEM— the agency responsible for forests and parks) Project in

Ecosystem Management operates on “ assumptions that grasslands, heathlands, shrublands and savannah’ s are natural vegetation types with significant rare species assemblages . . . in presettlement times” (Rivers, 1997 )

Ecological Restoration Program of the Massachusetts Department of Fisheries and Wildlife (DFW; the state agency responsible for wildlife and biodiversity) manages for open and early successional habitat based on the interpretation that “ many of our dry forests, shrublands and grasslands were managed with fire for thousands of years by Native Americans. Now, lack of occasional fire has caused significant changes in those communities, decreasing habitat for many of our rare plants and animals.” (<http://www.state.ma.us/dfwele/dfw/nhosp/nhrest.htm> )

Biodiversity Initiative of the Natural Heritage and Endangered Species Program of DFW cites that “ Fires were not only used [by Native Americans] to create and maintain agricultural fields but also to drive game. In using fire, many fire-adapted natural communities, such as grasslands and scrub oak barrens were created and maintained.” (<http://www.state.ma.us/dfwele/dfw/bdi/Landuse3.htm> ).

TNC - Katama grassland because “ this reserve is the largest example of native sandplain grassland left on Martha’ s Vineyard” (<http://nature.org/wherewework/northamerica/states/massachusetts/preserves/art5320.html> ).

A few miles away, TNC and DEM are collaborating to burn oak forest as “ restoration of the property’ s original grassland and woodland habitat” (<http://nature.org/wherewework/northamerica/states/massachusetts/preserves/art5334.html> ).

Katama Plains, the large grassland on the southeastern corner of Martha’ s Vineyard jointly managed by The Nature Conservancy, State of Massachusetts, and Town of Edgartown. The area has been variously described as “ native sandplain habitat” and “ one of New England’ s largest and best sandplain grasslands” (Scott, 1989; Liptak, 1998 ; TNC, <http://nature.org/wherewework/northamerica/states/massachusetts/preserves/art5320.html> ) and its dark soil profile has been interpreted as indicating grassland continuity for thousands of years (Scott, 1989 ). The area supports an array of uncommon species, including more than 18 birds, invertebrates and plants that are rare and declining. In order to reverse a trend of habitat deterioration, including shrub and tree invasion, the area has been managed through fire, mowing, and stem cutting in recent decades. According to site managers, the use of fire is preferred due to its perceived congruence with the site’ s native status and history. Nonetheless, despite ongoing management, many species have declined or disappeared over the past two decades, including a wide range of plant, bird, and invertebrate taxa.

Historical review provides an alternative interpretation of the site’ s origins. Located adjacent to Edgartown, Martha’ s Vineyard’ s oldest and most prosperous town, the Katama Plain was one of the first sites to be settled by Europeans on the island and was probably originally wooded (Herbster and Cherau, 2000 ). By 1642, the area was divided into 40 acre lots that were cleared for agriculture. Maps from 1776 onwards depict the area in fields; it was mapped as “ sheep pasture” by Crevecoeur in 1784; supported dairy cows in the 1880s; and, currently is comprised of varied fields and a grass airfield. As in the case of the North Haven sand plains, the dark soils are Ap horizons that developed through deep plowing of the sandy soils. The site and its assemblage of interesting species are clearly the recent products of human history. Encroachment of woody species is therefore a consequence of historical shifts in management. Whereas the current management regime appears to be largely ineffective in maintaining the habitat and eliminating woody plants, the site might well respond favorably to management that mimics the agricultural practices that gave rise to its historical condition over past centuries.

The insights arising from historical perspectives force us to address quite fundamental questions. What landscapes do we value, and why? Should we attempt to maintain cultural sites and assemblages? Are we seeking to maintain or recreate landscapes and assemblages from specific time periods? Should we use any and all means to support as much of our local biodiversity as possible? Once we have addressed these and related questions we can return

to historical information for further insights into management with some expectation of success. While we may open new policy and ethical discussions through historical– ecological studies, we also learn much about ecological process and options for conservation.

Clarke 2006 However, initial conclusions appear to suggest that plowing followed by repeated mowing has been as successful, if not more so, than other management strategies conducted in grasslands and heathlands throughout New England (including grazing and prescribed fire), at least in supporting the five rare species investigated.

Although fire can presumably create and maintain rare plant habitat in forests and shrublands of the central plain, it is unclear whether it could do so over a spatial and temporal scale to permit the occurrence of rare plant populations.

### TTOR Cape Poge Management Plan

The Native Americans inhabiting Martha’s Vineyard - known as the Wampanoag - have lived on the island for an estimated 12,000 to 13,000 years, and had profound effects on species composition and landscape structure. The Wampanoag imposed drastic changes on their surroundings, predominantly through the deliberate setting of large-scale fires. Setting these fires assisted the Wampanoag with hunting game, maintaining berry patches, and creating fertile soils for cultivation... Because of Wampanoag land-use practices, many explorers that traveled the waters surrounding the Vineyard in the 17<sup>th</sup> century found an “open” (unforested) landscape. Because a substantial proportion of Martha’s Vineyard was open at this time, the Europeans reasoned that this land would be well-suited for agriculture and pasture.

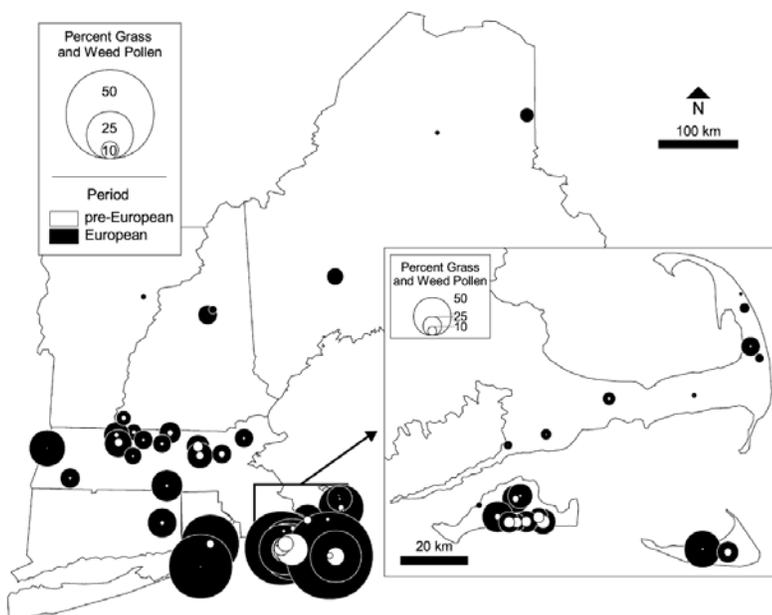


Fig. 5. Maps of paleoecological data depicting the relative abundance of grass (Gramineae) and weed (*Ambrosia*, *Plantago*, *Rumex*) vegetation in the pre-European (white, open symbols) and European (closed, black symbols) agricultural periods. For the pre-European period values represent the average of the five samples immediately preceding settlement as identified by the author of the study. For the European period values represent the maximum levels observed, typically in the mid- to late 19th century. Values are much higher in the European period due to the widespread development of extensive openland vegetation. During pre-European times values were consistently low (ca. <5%) with the exception of sites on the outwash plain of Martha’s Vineyard. Data are from Parshall et al. (2003), Fuller et al. (1998), Foster et al. (2002b), Stevens (1996), Dunwiddie (1990a), Harvard Forest (unpublished) and the North American Pollen Data Base.

## Ag Field Management for Birds – Massachusetts Audubon Society

### Mowing Small Hayfields (10 - 75 acres)

Hayfields support a rich diversity of grasses, wildflowers, and invertebrates that are important for breeding grassland birds. Old hayfields, not replanted for at least eight years, are favored by some birds (particularly bobolinks) because of the developed ground cover and a greater variety of grasses and other plants. Mow every one to three years to maintain fields in grasses and prevent growth of woody vegetation. Timing of mowing is crucial to the survival of nesting grassland birds. Early mowing in June and frequent mowing destroy nests and young. Therefore, mowing after August 1 is recommended if increasing grassland bird habitat is a management goal.

#### Recommendations

*Avoid mowing areas with ground-nesting birds before August 1.* Early cutting usually destroys ground nests. It is common to see young birds in the fields by late June, but cutting should be avoided because some species, such as savannah sparrows and eastern meadowlarks, raise a second brood later in the season, and the young fledge in late July.

*Be aware of where grassland birds are nesting in fields.* If mowing is essential prior to August 1 (such as in fields leased to farmers for hay), try to avoid areas where birds are frequently seen or to leave small patches such as edges or strips unmowed as nesting areas. Even when young birds appear to have left the nest, small unmowed patches are still needed to provide cover and feeding areas for the remainder of the summer until they migrate south.

*Limit mowing to every one to three years* in fields not harvested for high-quality hay. It is not necessary to mow every year for grassland birds. Not mowing a field one year or delaying mowing until late August will allow development of late-blooming wildflowers and butterflies.

### Grazing Small Pastures (10 - 75 acres)

Grazing can benefit grassland wildlife by creating a mosaic of grass heights and structure. Many birds respond favorably to limited grazing, including killdeers and meadowlarks. However, intensive grazing leads to a loss of plant diversity and cover for wildlife. In the Northeast, the majority of grazed pastures are small and intensively grazed during the summer months, making them unsuitable for most nesting birds.

#### Recommendations

*In grazed pastures with nesting birds, keep approximately 40 percent of the vegetation cover at a minimum height of 8 to 12 inches* or at "knee height," with scattered forbs until August 1. This can be achieved by rotating grazing animals through several fields during the growing season. Keeping some areas ungrazed during the nesting season usually improves nest success.

*Avoid overgrazing fields.* Overgrazing creates excessive bare ground, which can cause erosion, reduce plant and invertebrate diversity, and lead to trampling of bird nests.

### Burning Large Grasslands

Burning reduces buildup of dead vegetation, adds nutrients to the soil, rejuvenates plant growth, and helps prevent the spread of woody vegetation. Hayfields that develop a thick layer of thatch are usually not used by nesting birds because they cannot effectively run on the ground to escape predators or forage for food. Although burning is not always feasible on small grasslands, when possible it can benefit grassland bird populations within one or two years following a burn.

## Recommendations

*Burning every two to six years* provides the best habitat for birds nesting in small grasslands. If possible, provide adjacent unburned grassland habitat for nesting birds during the burn year.

*Burning in early spring* (before the arrival of birds in mid-May) is most beneficial to vegetation and nesting birds.

Large Grasslands

## Grazed Grasslands

Cattle, sheep, and horses have different food preferences; their grazing has effects on the different vegetation structure of pastures. Many grassland birds in the Northeast tolerate and benefit from light grazing because it creates a mosaic of grass heights and structures, removes ground litter, and benefits bunch grasses. Light grazing also allows the development of wildflowers and scattered shrubs. However, intensive grazing leads to a loss of plant diversity and cover for wildlife. Large grasslands can be managed in a rotational system to benefit breeding birds.

## Recommendations

*In grazed pastures with nesting birds, keep approximately 40 percent of the vegetation cover at a minimum height of 8 to 12 inches* or at "knee height" with scattered forbs until August 1. This can be achieved by rotational grazing. During the most critical nesting period (June 1 to July 15), keep cattle off fields with dense populations of grassland birds. Leave some pastures undisturbed in May and June when birds are arriving and setting up territories.

*Avoid overgrazing fields.* Overgrazing creates excessive bare ground that can cause erosion, reduce plant and invertebrate diversity, and lead to trampling of ground-nesting birds.

## Mowing Large Grasslands

Hayfields and meadows support a rich diversity of grasses, wildflowers, and invertebrates that are important for breeding grassland birds. Old hayfields, not replanted for at least eight years, are favored by some birds (such as bobolinks) because of the developed ground cover and a greater variety of grasses and other plants. Mow every one to three years to maintain fields in grasses and prevent growth of woody vegetation.

Timing of mowing is crucial to the survival of nesting grassland birds. Early and frequent mowing destroys nests and young. Therefore, mowing after August 1 is recommended if increasing grassland bird habitat is a management goal.

Recently, many grasses native to the Northeast have been replaced by fast-growing grasses that can be harvested several times during the summer to provide high-quality hay for livestock. This increased production, plus the use of fertilizers and modern machinery, has created grasslands with little diversity. Switching grass varieties or altering mowing practices can benefit breeding grassland birds.

## Recommendations

*Avoid mowing areas with ground-nesting birds before August 1.* It is common to see young birds in fields by late June, but cutting should be avoided because some species, such as eastern meadowlarks and grasshopper sparrows, raise a second brood later in the season, and the young fledge in late July.

## Management of Grasslands at Airfields for Grassland Birds

## Management of Capped Landfills for Grassland Birds

## Grassland Restoration

## Managing Agricultural Lands for Grassland Birds

### Value of Farms to Birds

### Value of Birds to Farms

#### Conservation Management – Planning. Notes from the HF WebMap of Martha's Vineyard

#### Farms

Large savanna area between Menemsha Cross Road and End of Flanders Lane-Old Woods Road. Not marked as fields.

James Taylor(?) – Muddy Cove Road. Large fields and open savanna. But field in front of his house not larked as such. Not conserved

*Pasture potential where POS adjoins existing farm*

(1)Peaked Hill Adjoining Athearn's grandmother's place on Homeward Bound Lane. Heath and Scrub in there. Entire landscape to the south and west is Peaked Hill. (2) Coming in from Tabor House Road along Pasture Road there are pastures and cattle grazing in some.

Eddy Farm – Considerable area of field near Allen Farm that isn't being farmed. Small parts of it are conserved.

The Aerie – Farm that extends south to Old North Road off Pond Mark Road. Beef cattle in 2013.

Mermaid Farm. Fields across street are partially used. Could be more?

Resurrect old farm landscape: Quanames (Priscilla Hancock, Wade's Fields, Whiting) up through both sides of north Tisbury Pond (Flat Point, Athearn-Uncle Leonard's Farm), Crow Hollow (Horse); Grey Barn; Center of WT (Whiting, Nat's Farm, Cleveland Farm (Horse?); Polly Hill, Square Field and Littlefield Preserve; Old Court House Road to Fields on Old Court House Road to those behind Keene.

Waskosims, Woods Preserve to Seven Gates

Sweetened Water Preserve and Sweetened Water Farm

Katama Air Field (Big area to south is open without runways); Garden Cove Rd

Chappaquiddick

Hickory Cove and adjoining fields in hollow

Jerry Jeffers and adjoining farm

Pimpneymouse Farm

Farm across Dike Rd from Edo's

Tom Neck Point

Poucha Pond Reservation  
Quammox  
Wasque

*Other large pasture potential*

Menemsha Hills Reserve and adjoining large open farm (Jet Blue guy?)

South Shore

Long Point (2-3 Old ditch and ridge still visible)

Homer Pond to Watcha Club Road

Scrubby Neck Farm (Ditch-ridge, field borders, mowing/cultivation visible)

Oyster Pond Road

Pohogonot and Job's Neck – including Eric Peter's big field

Kanomika Road – Mazur? To E; Big area to W

Areas to E off Meeting House Road (S of Landfill)

**Wildlands**

*Interesting areas to explore further*

Boldwater Road is where the fake fields are, bounded by imported stonewalls.

Llewellyn Way off Meshaket Way across from Morning Glory

To E of Landfill Road – dump; to NE – big open pine woods