

Managing Habitats for Wildlife: Case Studies and Curiosities

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Goals of today's projects?

- Protect and manage grasslands
- Restore grasslands
- Attract and support grassland species
- (Not mutually exclusive goals)

Underlying motivation?

Protecting native biological diversity

Manage for species *and* habitats



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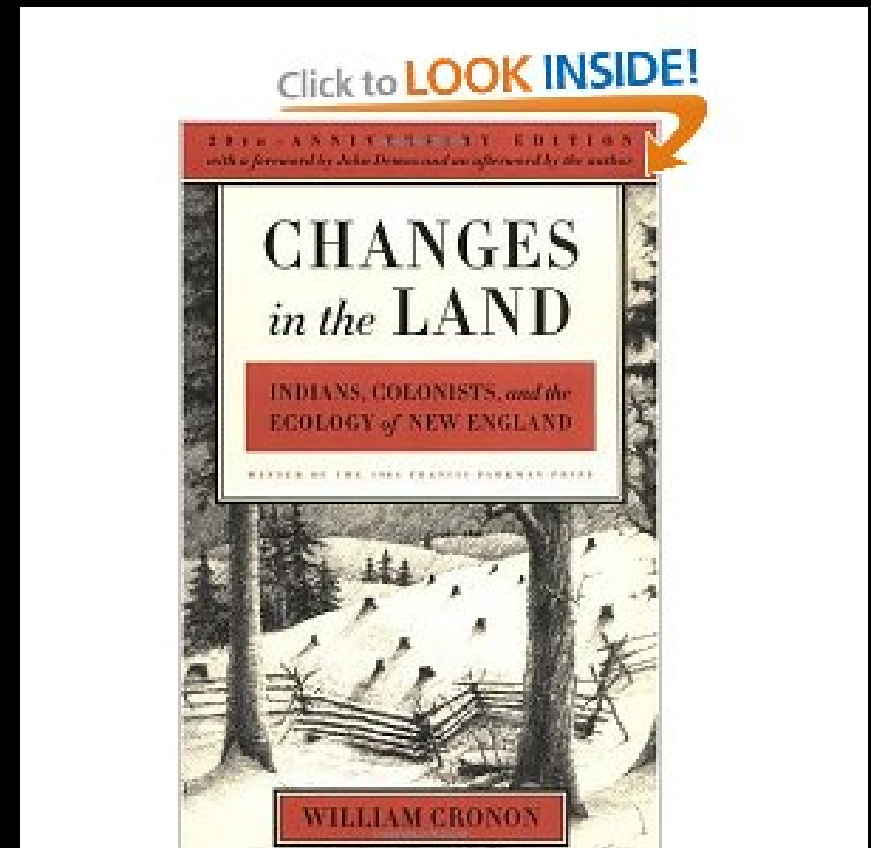
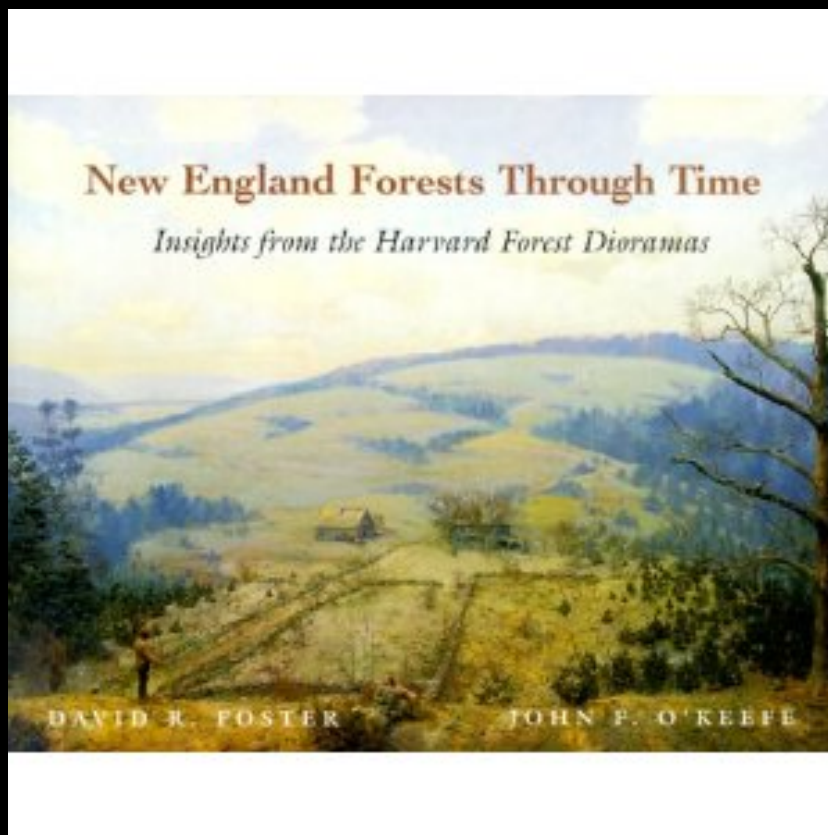
Management & Restoration Strategies

- Inventory natural features and develop management plans
- Assess special attributes and challenges
- Steward properties appropriately
- Every project is unique...

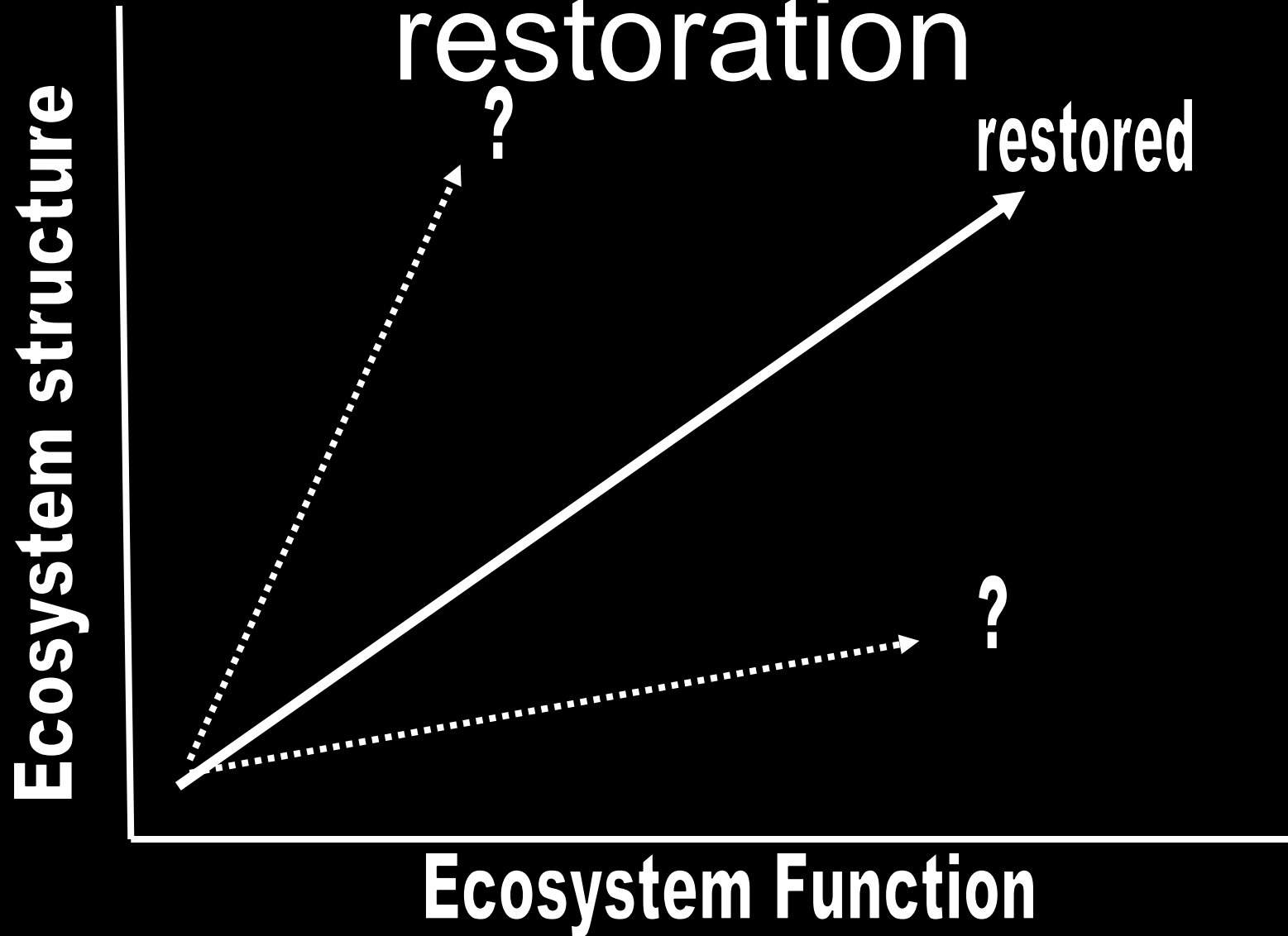
Ecological restoration?

- Rebuild what was there **previously**
- Repair and bring back to **proper** condition
- Create **functioning** system though not always matching the **reference** system
- Assist natural processes
- Mimic natural conditions

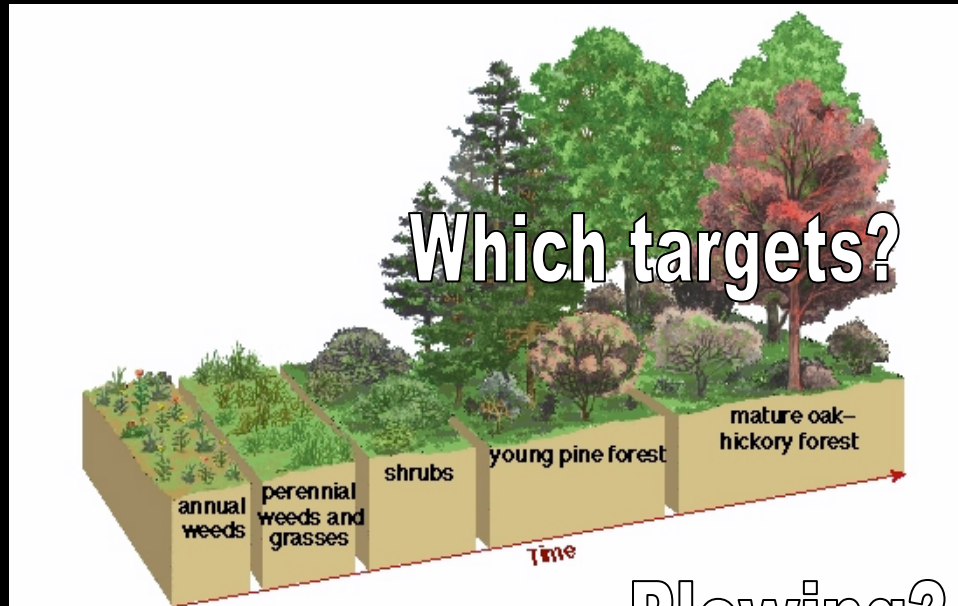
Reference systems?



Paths to successful restoration



Grassland Methods



Plowing? Grazing?



Why grasslands?

savannah sparrow



grasshopper sparrow



upland sandpiper



eastern meadowlark



eastern bluebird



bobolink



15 of 19 grassland and savanna birds have declined
13 of 40 listed birds are grassland specialists

Grassland birds

Common Name	Scientific Name
Northern Harrier	<i>Circus cyaneus</i>
Upland Sandpiper	<i>Bartramia longicauda</i>
Short-eared Owl	<i>Asio flammeus</i>
Horned Lark	<i>Eremophila alpestris</i>
Sedge Wren	<i>Cistothorus platensis</i>
Bachman's Sparrow	<i>Aimophila aestivalis</i>
Vesper Sparrow	<i>Pooecetes gramineus</i>
Savannah Sparrow	<i>Passerculus sandwichensis</i>
Grasshopper Sparrow	<i>Ammodramus savannarum</i>
Henslow's Sparrow	<i>Ammodramus henslowii</i>
Dickcissel	<i>Spiza americana</i>
Bobolink	<i>Dolichonyx oryzivorus</i>
Eastern Meadowlark	<i>Sturnella magna</i>

Some grassland management challenges

- Some birds like sparse veg. (horned larks)
- Some birds like patches of bare ground (grasshopper sparrows)
- Some like recent mowing or burning (horned larks and grasshopper sparrows)
- Some like no disturbance for several years (Henslow's sparrow)
- How do these compare to traditional pastures?
- This could require some balancing!

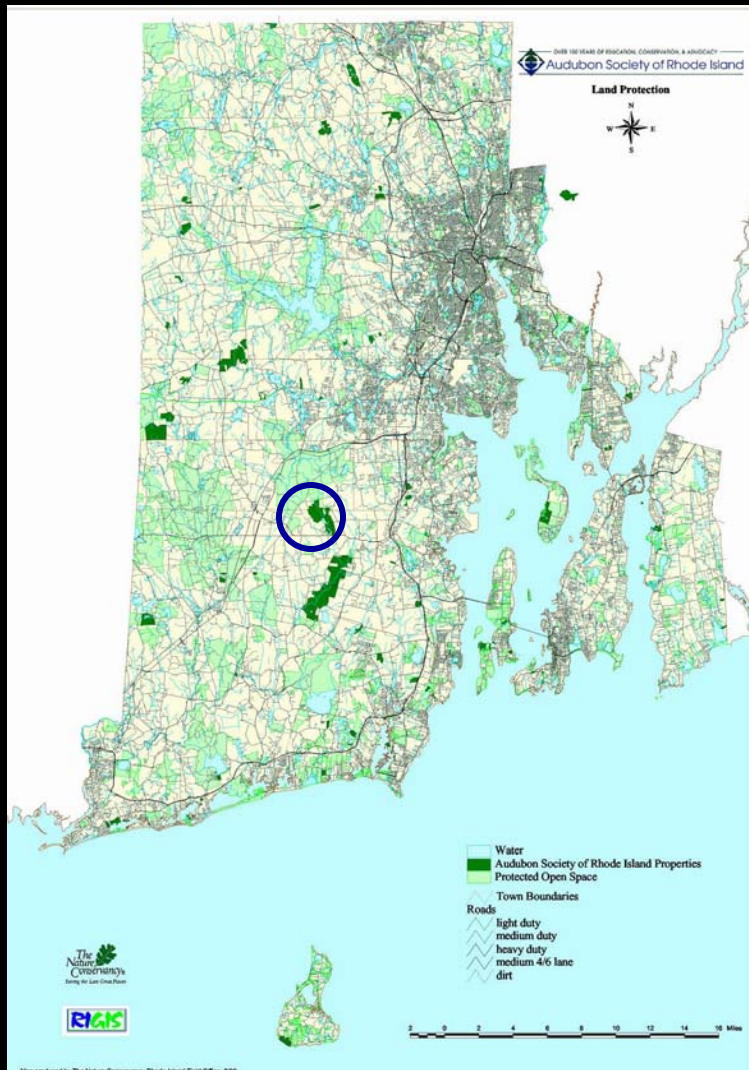
Area requirements?

- Density and diversity of birds and other species tend to increase with habitat area
- Ex. few grasshopper sparrows, bobolinks, or savannah sparrows are found in grasslands less than 75 acres (30 ha)
- Large areas can be managed as mosaics (not feasible on small patches)
- There is hope for eastern grassland birds because of the history of ephemeral habitats

General protocol for grassland birds

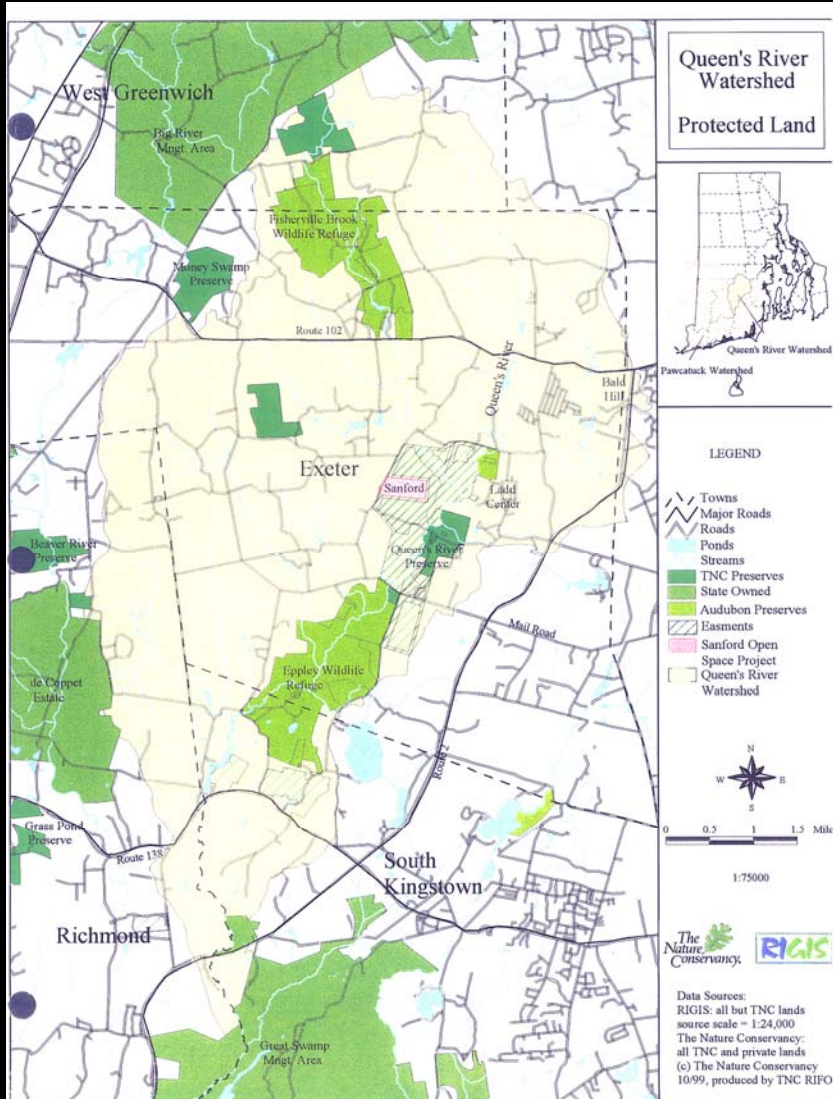
- Survey between late May and late June
- Survey between 0600 and 1000 hours
- Repeat on three nonconsecutive days
- Survey within 50 m radius circles
- Record: visual, singing, calling, flyover

Case Study: Fisherville Brook Wildlife Refuge



- Goals?
- Challenges?
- Targets?

Fisherville Brook WR



- Approx. 1100 acres in Exeter
- Approx. 80 acres of grassland
- Protection of Queen River tributaries

Management & Restoration Strategies

- Inventory natural features and develop management plans
- Assess special attributes and challenges (*the grasslands are special at Fisherville*)
- Steward properties appropriately

Cutting w/ w/o hay collection



Species recorded (birds)

51 species including: Eastern Meadowlark, Tree Swallow, Turkey, Savannah Sparrow, Eastern Goldfinch, American Kestrel, Field Sparrow, Eastern Kingbird, Red-tailed Hawk, Chipping Sparrow, Eastern Towhee, Red-shouldered Hawk, Prairie Warbler, Indigo Bunting

Species recorded cont.

- Mammals: deer, coyote, grey & red fox, rabbits, voles, white-footed and jumping mice, moles
- “Herps”: black racers, garter snakes, brown snakes, ring-necked snakes, box, snapper and painted turtles, tree frogs

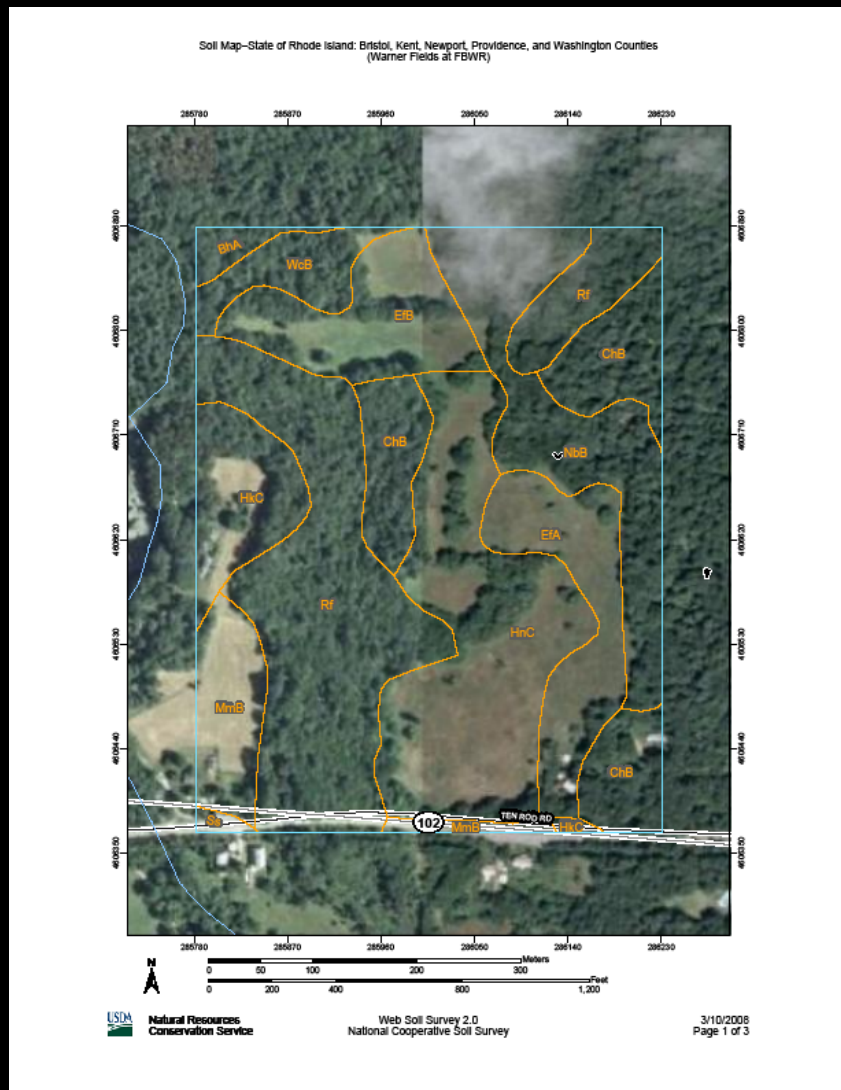
Species recorded cont.



- 30+ butterfly species
- Monitored each summer for NA Butterfly Association counts



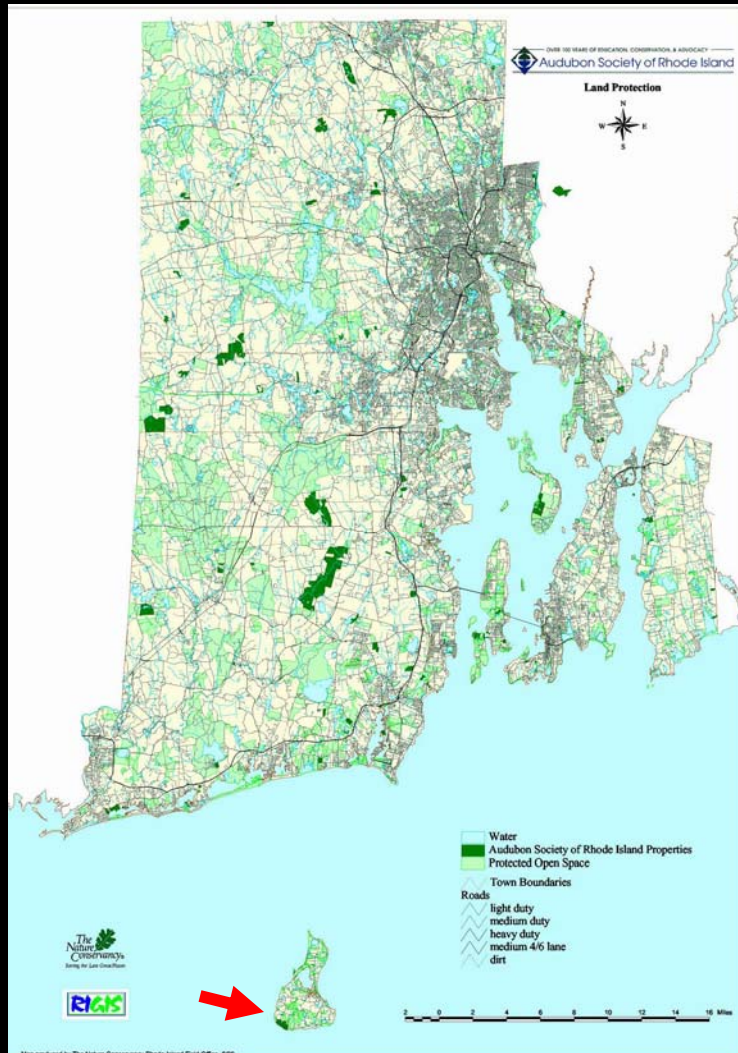
Managing grassland geometry



Fisherville bottom line?

- Keep your eyes open (you never know what will turn up)
- Avoid single species mentality
- Reevaluate objectives (*it may not be appropriate to treat all fields the same*)

Case Study: Lewis-Dickens Farm

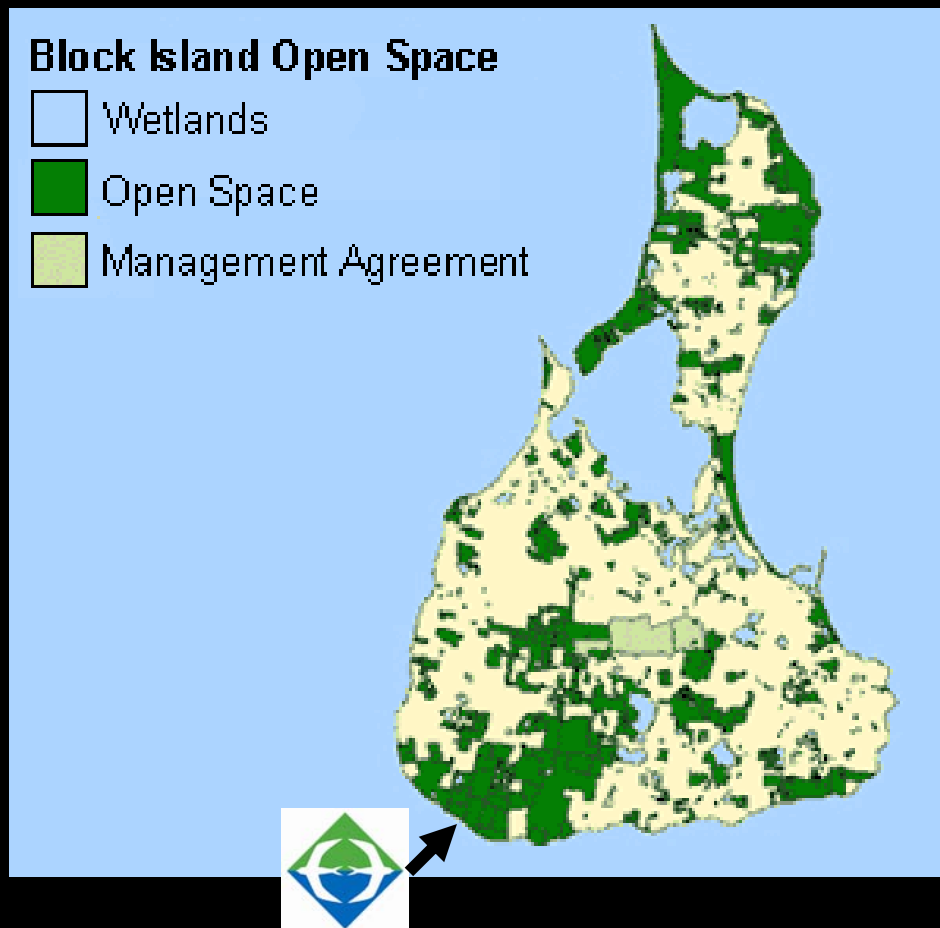


- Approx. 120 acres on BI
- Approx. 100 acres of grassland
- Goals, challenges, targets?

Management & Restoration Strategies

- Inventory natural features and develop management plans
- Assess special attributes and challenges
- Steward properties appropriately
- *These come up with Lewis-Dickens

Lewis-Dickens Farm



- Unique challenges
- Logistical?
- “Viewscales?”
- Other features?







Native Grazers vs. Cows



- Cows need water (more than bison)
- Cows need shade (more than bison)

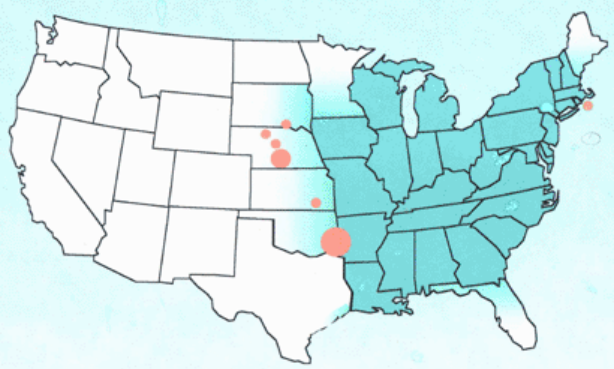
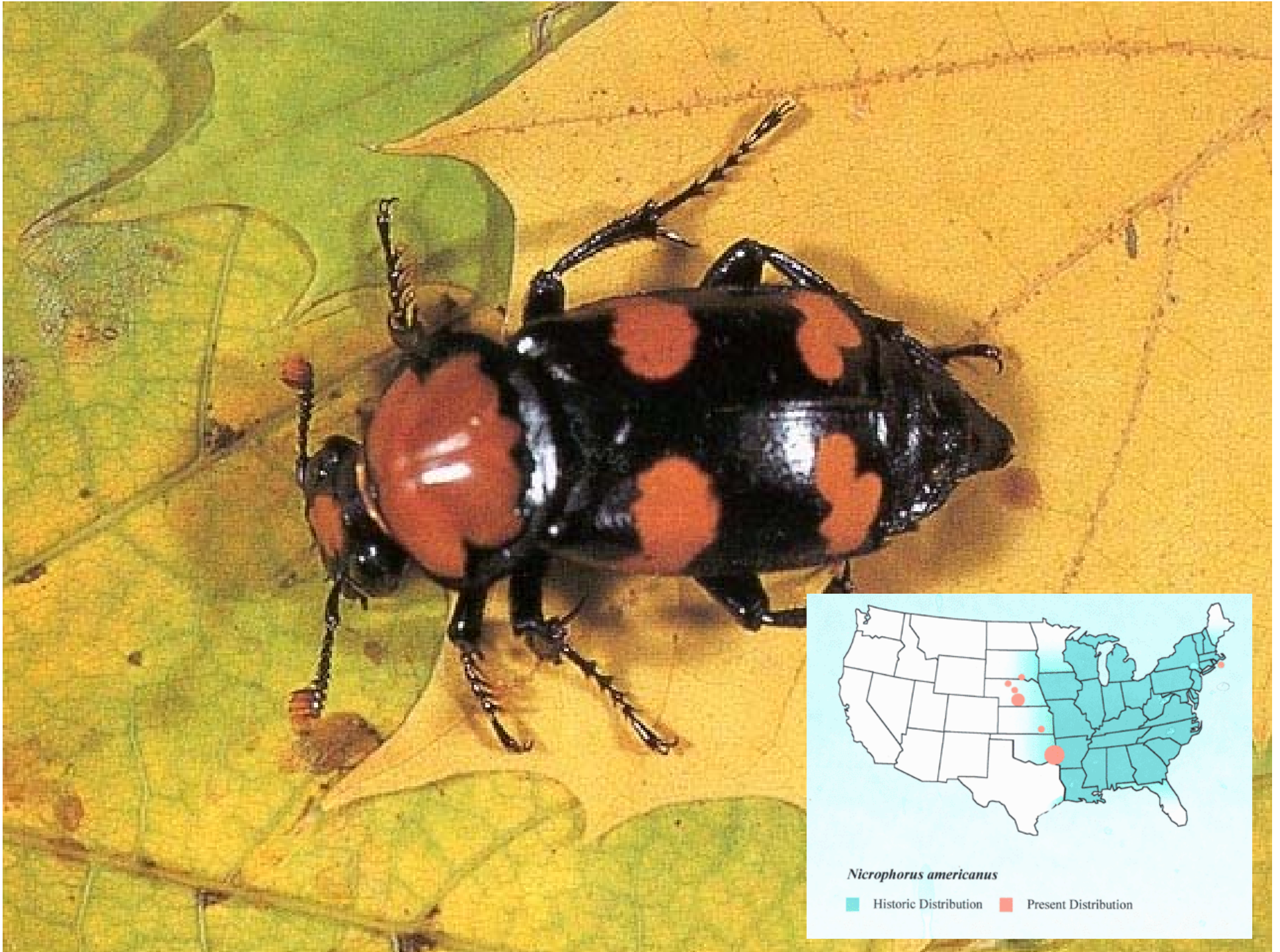


Patchwork approach

Some L-D species



- Grasshopper and savannah sparrows?
- Barn owls nest nearby and hunt
- Harriers patrol here.
- One of the last pheasant hotspots?
- Bobwhite quail?



Nicrophorus americanus

■ Historic Distribution ■ Present Distribution

More Lewis-Dickens special species... and special diet



- RI's largest collection of dung beetles on BI
- Includes some rhinoceros beetle species
- A "new" find



Bottom line?

Case Study: Ethel M.C. Newman Wildlife Refuge

- Goals?
- Challenges?
- Targets?

Newman WR



- Approx. 202 acres of old farm and surrounding forest
- Approx. 20 acres of grassland
- Straddles Gloucester and Smithfield line

Management & Restoration Strategies

- Inventory natural features and develop management plans
- Assess special attributes and challenges
- Steward properties appropriately





What has worked?



Ongoing monitoring



Some Newman species



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- Assorted warblers, vireos, sparrows, flycatchers, grosbeaks etc.
- Woodcocks and turkey do well here (bobwhite?)
- A great butterfly spot

A photograph of a lush green field with a stone wall in the background and a line of trees under a cloudy sky. The text "Bottom line?" is overlaid in white.

Bottom line?

- Keep your eyes open
- Avoid single species mentality

Overall evaluation?

“The infamous take-home”

Acknowledgments

- Audubon staff and volunteers
- USDA-NRCS Wildlife Habitat Incentives Program

