Management

Management plans are recommended for all conservation lands, but what is management?

“Management is a decision science, the object being control. It is a cybernetic or control function, guiding systems toward objectives. The managerial function is measured in the difference between the benefits the system would produce naturally and those it produces under the manager’s guidance.”

Wording taken from a text book on Wildlife Management, suggestive of how “management” is concerned more with providing anthropogenic benefits rather than ecological benefits.

As such, brings to mind the following words of Aldo Leopold:

"*We abuse land because we regard it as a commodity belonging to us. When we see land as a community in which we belong, we may begin to use it with love and respect*."

Aldo Leopold, Foreward to
Sand County Almanac

Focusing on Community rather than commodity brings us to thinking more about

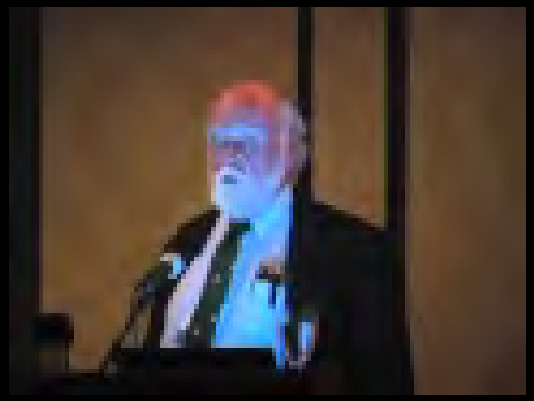
Biodiversity

And, when we think about Rhode Island biodiversity we should consider the organization that focused on this issue for thirty years -

Rhode Island Natural Heritage Program

-Established 1979

- joint venture DEM/TNC



Dr. Bob Jenkins, Chief Scientist, TNC

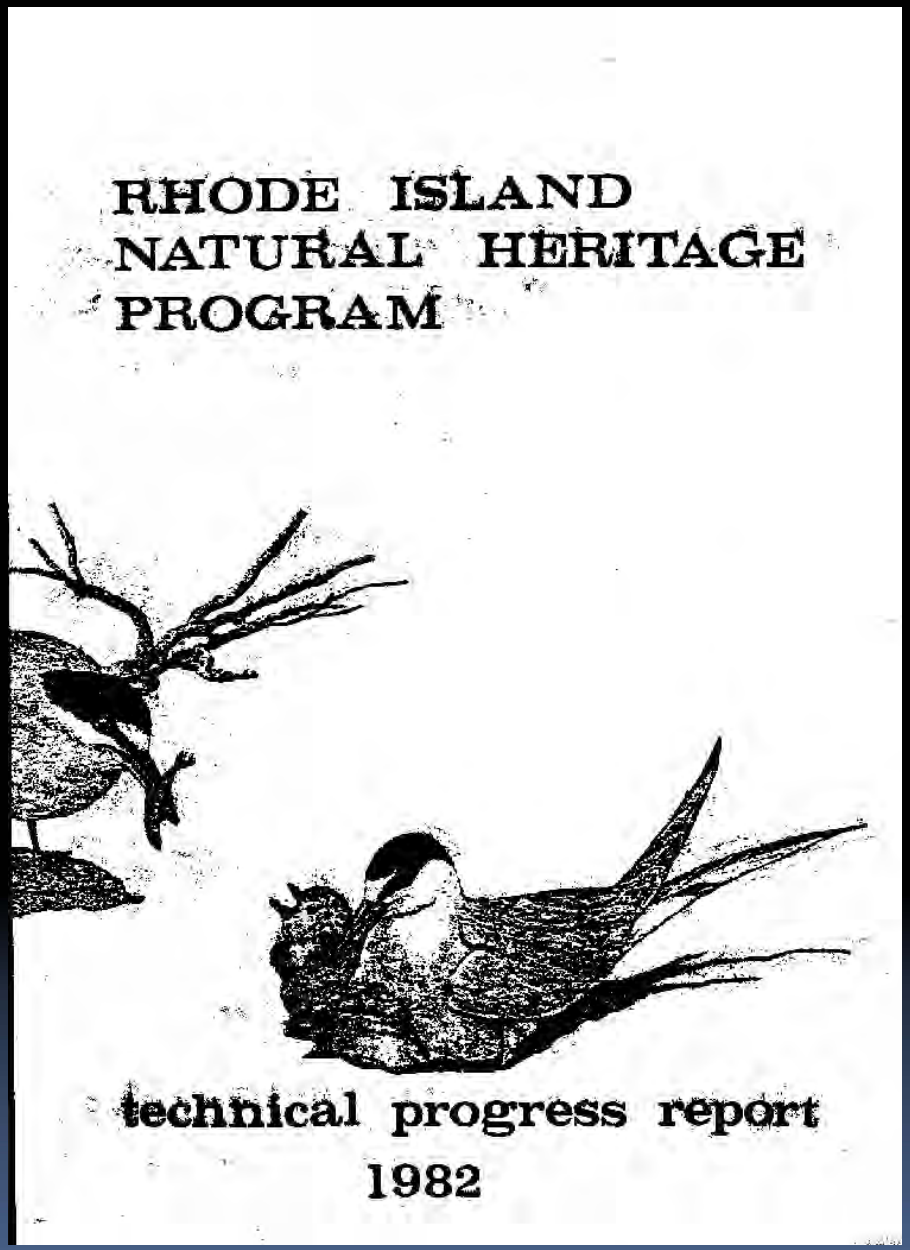
W. Ed Wood, Director, RIDEM

Natural Heritage Program

- comprehensive inventory of Rhode Island's natural diversity

- focused on "elements" of biodiversity that were rare, unique, or exemplary

- plants, animals, natural communities



In 1982: Rare Native Species

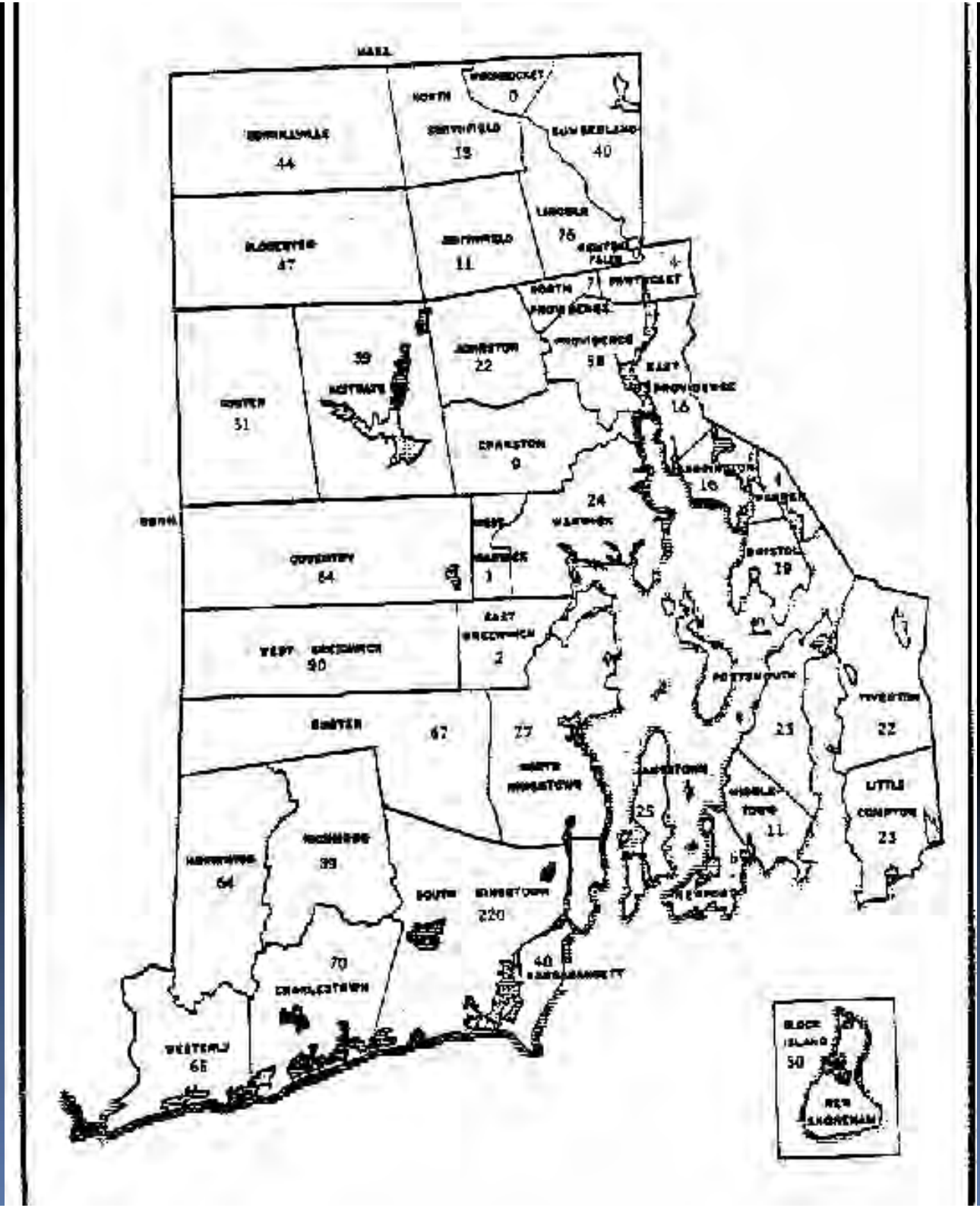
(<10 estimated occurrences)

269 plants

147 animals

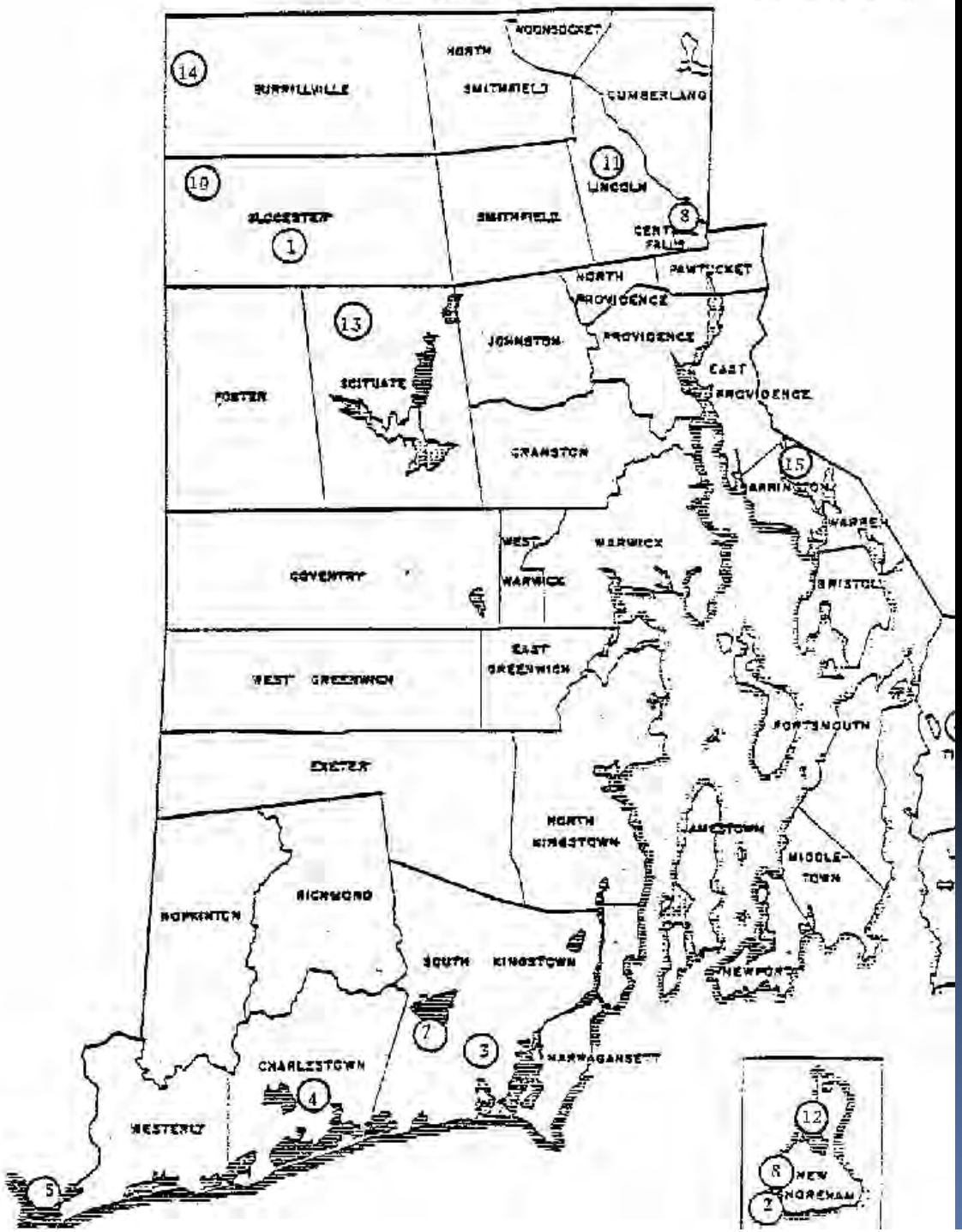
42 natural communities

1393 element occurrences



Number of Element Occurrences in each Rhode Island municipality

Figure 23. Locations of proposed preserves in Rhode Island as identified by the Rhode Island Natural Heritage Program.



30 High Priority Species

13 plants

17 animals

Listed, Proposed or Candidates for Federal Listing

and

State Endangered

15 High Priority Sites for Conservation Action (1982)

Natural Heritage Program 1982-2016

388 rare plants (+ 119 since 1982)

Seven plant extirpations in past 20 years.

148 rare animals (-1 since 1982)

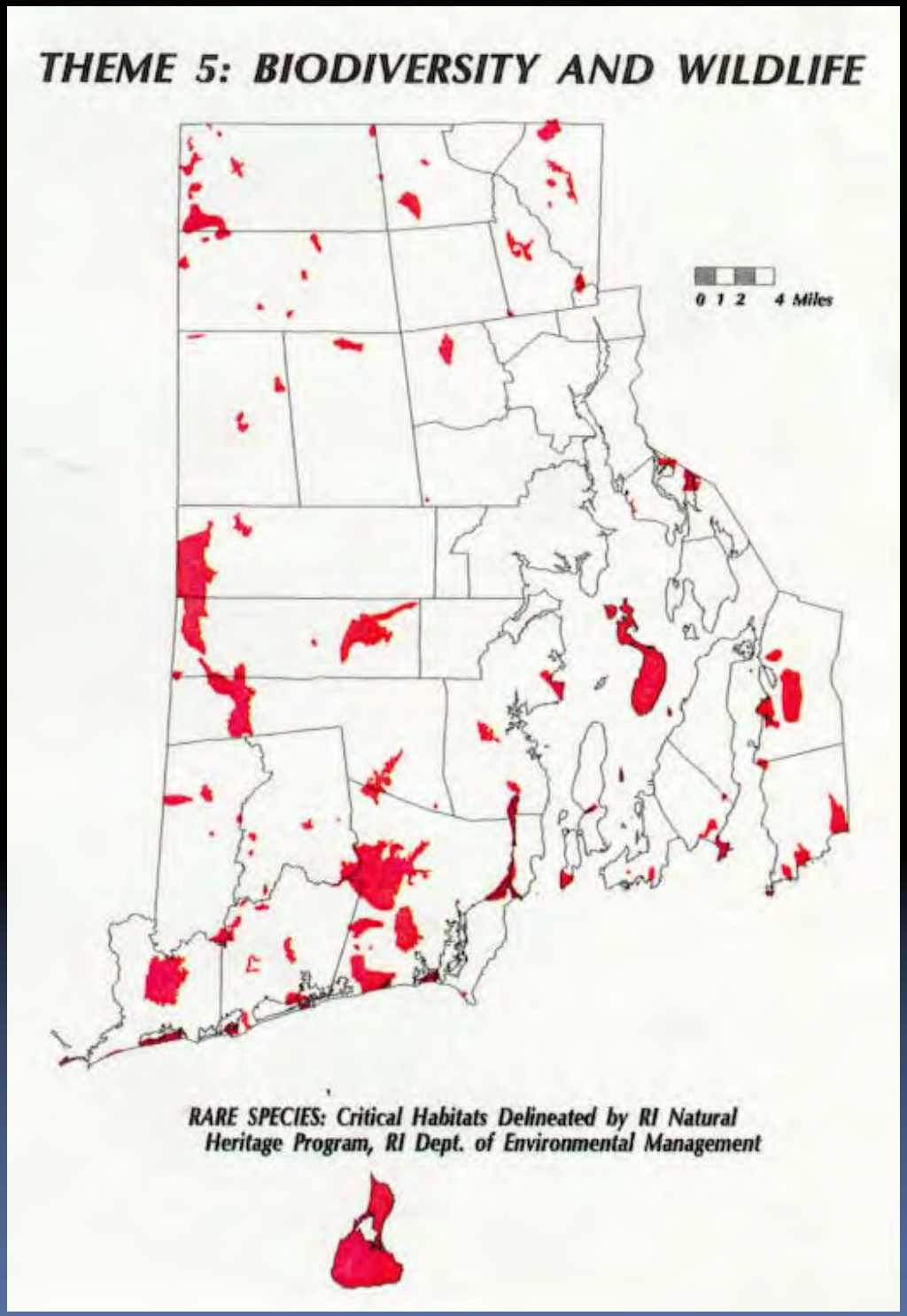
65 invertebrates added

66 vertebrates removed

1914 element occurrences (+ 521 since 1982)

(does not include 2007-2015)

Some of the ways Natural Heritage Program information was used:



Rhode Island Resources Protection Plan (1995)

Town Comprehensive Plans
Example from South Kingstown

7. **Rare and Endangered Species**

South Kingstown is the single most important town in Rhode Island for rare species and natural communities (pers. comm., Joanne Michaud, RIDEM, 1990). About 20 percent of the State's most significant sites occur in the Town. The Rhode Island Department of Environmental Management's Natural Heritage Program (RINHP) has mapped the areas of critical habitat for these species of ecological significance. Several areas in the Town merit specific note.

a.) The Great Swamp: This includes Worden Pond and the contiguous wetlands. Of the 140 sites identified throughout the state, The RINHP and the Nature Conservancy ranked this as second in terms of its ecological importance. The Swamp is host to at least 13 occurrences of rare invertebrates.

b.) Matunuck Hills: The area includes approximately 1,200 acres on the Charlestown moraine in these 10 kettle ponds and adjacent wetlands, at least 17 different state-listed rare plant species are found. This site is ranked fourth of the 140 in the state for biological diversity significance.

c.) Pitch Pine/Scrub Oak Barrens: This is a large area which lies south southeast of Worden Pond, off Gravelly Hill and Shannock Roads. The area is ranked sixth out of 140 in the state for biological significance, providing habitat for over a dozen species of State-listed plants and animals.

d) Queen River: The area includes the wetlands along the Queen River from the northern end of Glen Rock Reservoir and reaches almost to Bear Swamp.

e) Pettaquamscutt River: The area includes much of the Narrow River watershed. In October, 1988, Congress passed legislation authorizing the creation of the Pettaquamscutt Cove National Wildlife Refuge.

f.) Factory Pond: The Factory Pond wetland complex supports a habitat which has a number of rare and endangered species, including a unique 12 acre dwarf Atlantic White Cedar bog.

g) Trustom and Card Ponds: The ponds and the associated wetlands, which include almost all of Green Hill Swamp to the west, support rare habitat and species.

h.) Other areas: a) Tuck Point in Green Hill Pond; b) the ponds and wetlands from Gooseberry Island to Matunuck State Beach and the southern corner of Potter Pond; and c) Bull Head Pond.

Rhode Island Natural Heritage Preservation Commission
Scoring Criteria for Open Space Grants

The Natural Heritage Preservation Commission and the Natural Heritage Preservation Commission Advisory Committee shall evaluate grant applications based on the following scoring criteria. (100 points total)

(A)HABITAT PROTECTION (25 points)

1. Critical and/or Uncommon Habitat: The property supports critical and/or uncommon, ecologically fragile habitat, or is a unique ecological community in the state or region.

Habitat/Community Types considered:
Estuarine Intertidal Wetlands
Freshwater Tidal Marsh
Coastal Plain Pond and/or Pondshore
Open Peatland (Bogs and Fens)
Vernal Pools
Morainal Grasslands
Maritime/Inland Dune System
Pitch Pine/Scrub Oak Barrens
Calcareous Habitats (forests, outcrops, etc.)

AND….

2. Common Community Type:

3. Habitat Diversity:

4. Urban Habitat Protection: Property is located in an urban or densely developed area where the habitat, open space, and/or educational values are particularly significant or unique.

5. Rare/Endangered Species: The property supports or is capable of supporting rare/endangered species. The Rhode Island Natural Heritage Program current lists of rare/endangered species are the references used under this criterion.

Rhode Island Department of Environmental Management
Open Space Grants
Management Plan Guidelines

"When writing the required management plan, the following points should be addressed……." (reviewed by Natural Heritage Program to insure proper stewardship of identified values)

RI SCORP

Natural Diversity. A key component of the state's greenspace system is protecting biodiversity.

Action Agenda 2009-2014

- Continue to support the Natural Heritage Program to identify and document biodiversity in Rhode Island (statement included in 2009 SCORP update despite the fact the NHP had been dissolved in 2007)

Returning to the Topic of Management:

Ecological Society of America, Issues in Ecology, 1999

Biodiversity and Ecosystem Functioning: Maintaining Natural Life Support Processes

"Human modifications to the living community in an ecosystem can alter ecological functions and life support services that are vital to the well-being of human societies.

Substantial changes have already occurred, especially local and global losses of biodiversity. The primary cause has been widespread human transformation of once highly diverse natural ecosystems into relatively species-poor managed ecosystems.

Recent studies suggest that such reductions in biodiversity can alter both the magnitude and the stability of ecosystem processes, especially when biodiversity is reduced to the low levels typical of many managed systems."

Need a better lexicon to promote the preservation of Biodiversity:

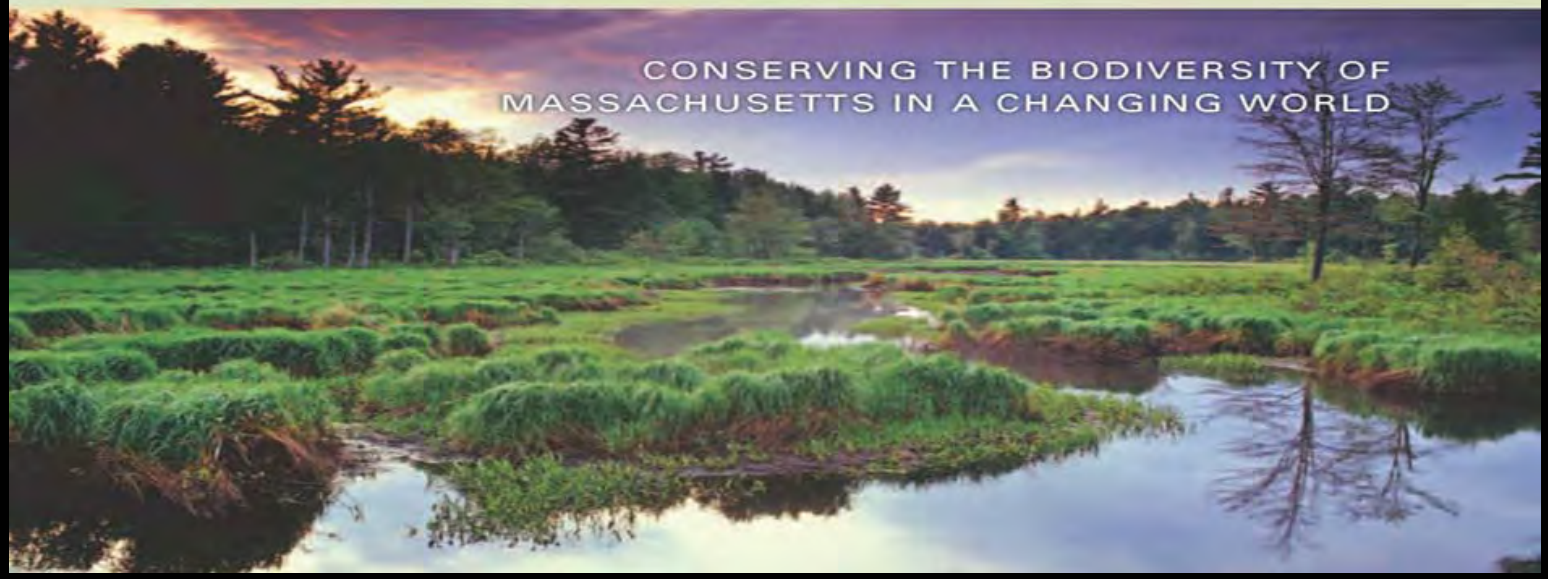
Less: Management More: Stewardship

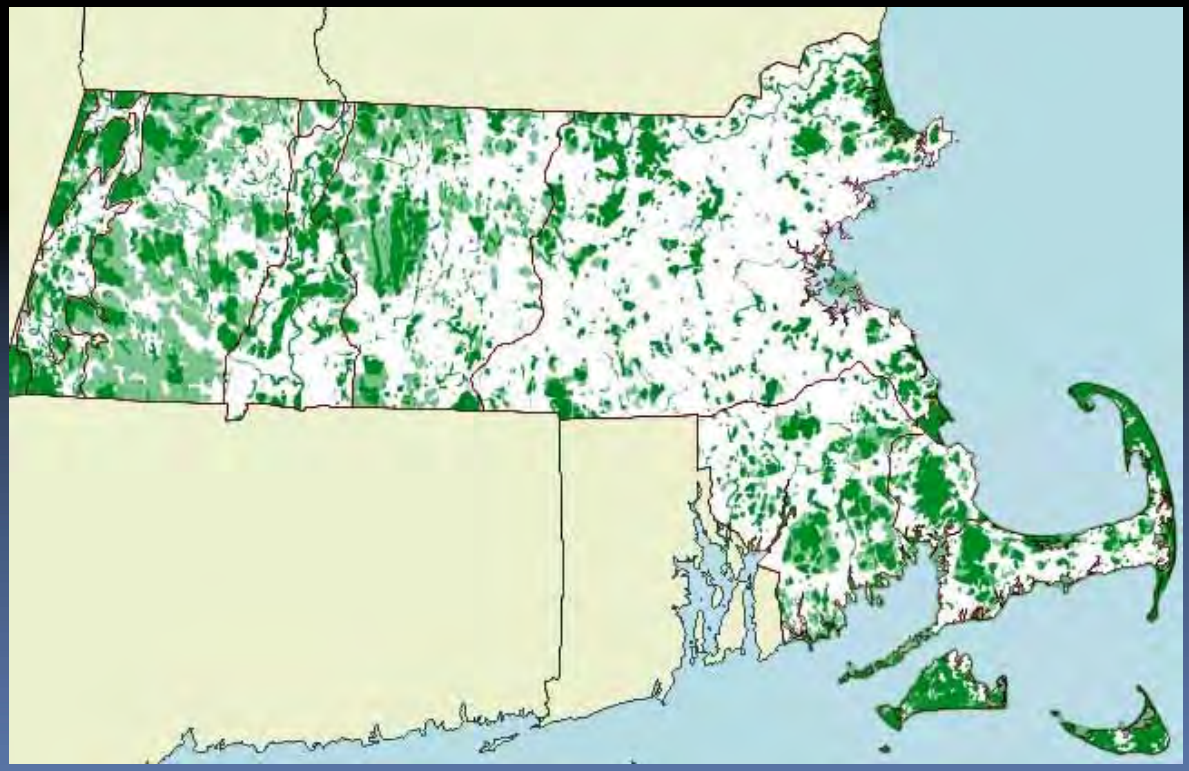
Less: Habitat More: Community/Ecosystem

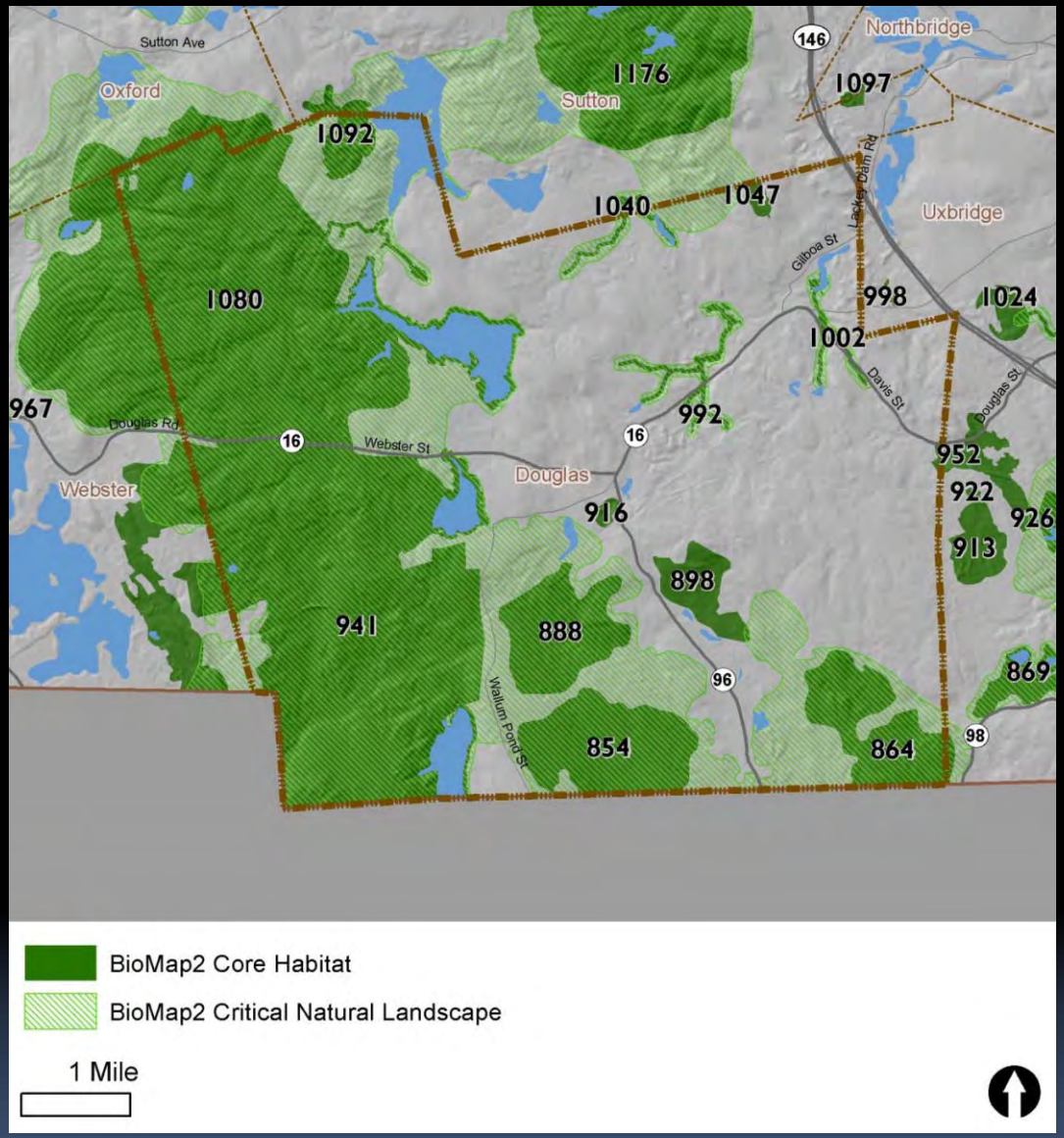
Less: Species Specific Management More: Stewardship of Ecosystem Processes

An Alternative Approach:

BioMap 2


CONSERVING THE BIODIVERSITY OF
MASSACHUSETTS IN A CHANGING WORLD





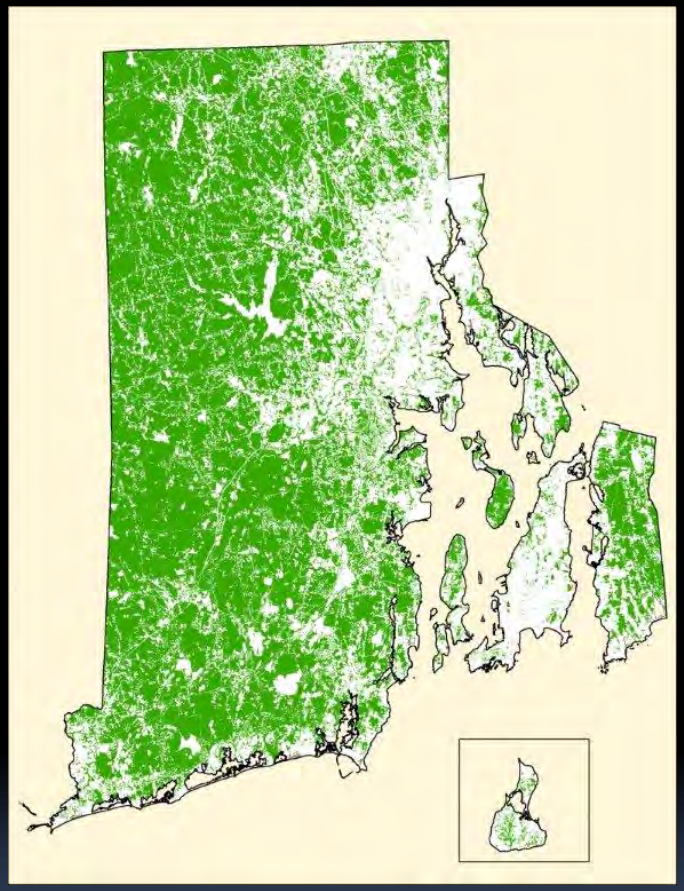
Town of Douglas Core 941

Forest Core
Wetland Core
Aquatic Core
Vernal Pool Core
Priority & Exemplary Natural Communities
Inland Atlantic White Cedar Swamp S2
Kettlehole Wet Meadow S3
Oak - Tulip Tree Forest

Species of Conservation Concern
Algae-like Pondweed *Potamogeton confervoides T*
Sclerolepis *Sclerolepis uniflora E*
Chain Fern Borer Moth *Papaipema stenocelis T*
Hessel's Hairstreak *Callophrys hesseli SC*
Attenuated Bluet *Enallagma daeckii T*
Pine Barrens Bluet *Enallagma recurvatum T*
Scarlet Bluet *Enallagma pictum T*
Comet Darner *Anax longipes SC*
Four-toed Salamander *Hemidactylium scutatum*

Non-listed SWAP
Marbled Salamander *Ambystoma opacum T*
Eastern Whip-poor-will *Caprimulgus vociferus SC*

The Conservation Cooperative



Until there is an organized approach to biodiversity conservation in Rhode Island, the Conservation Cooperative can provide assessments at the parcel, town, regional, and landscape level.

Linda Steere, Principal Biologist,
Rick Enser, Conservation Biologist
Rebecca McCue, Wetland Biologist
Suzanne Enser, Conservation Biologist

Stewardship Planning; Biodiversity Assessments; Baseline Documentation; Open Space Grants and Comprehensive Plans; Invasive Species Management; Natural Community Restoration

ConservationCoop@gmail.com

"Is the maintenance and enhancement of biodiversity strictly within the province of government agencies and national conservation organizations?

NO!

Private landowners and land trusts have indispensable roles to play in protecting biodiversity."

Exchange, 1996:

Three Principles for Future Conservation Projects
Goal: Protecting and Restoring Biological Integrity

1.Think Big

Priority given to projects that create larger reserves or that fill in gaps in a large system of reserves.

2.Think Diverse

Projects must increasingly focus on all elements of biological diversity including those that up to now have largely been ignored

3. Think Like Nature

Management must promote the interactions of multiple organisms in complex ecosystems, by allowing for natural disturbances, and allowing habitats to shift in response to environmental conditions.

Allowing nature to operate in its own way, in its own time, will require establishing “nonmanagement” plans as well as promoting conservation on lands that are not “working” in the traditional sense.

Also, need to follow most current scientific thinking:

Review

Biodiversity management in the face of climate change: A review of 22 years of recommendations

Nicole E. Heller, Erika S. Zavaleta*

Environmental Studies Department, University of California, Santa Cruz, Santa Cruz, CA 95606, United States

Three Primary Recommendations for Climate Change Adaptation Strategies:

1. Increase Connectivity

(design corridors, remove barriers for dispersal, locate reserves close to each other, reforestation)

2.Integrate Climate Change into Planning Strategies

2.Mitigate Other Threats

(i.e., invasive species, fragmentation, pollution)

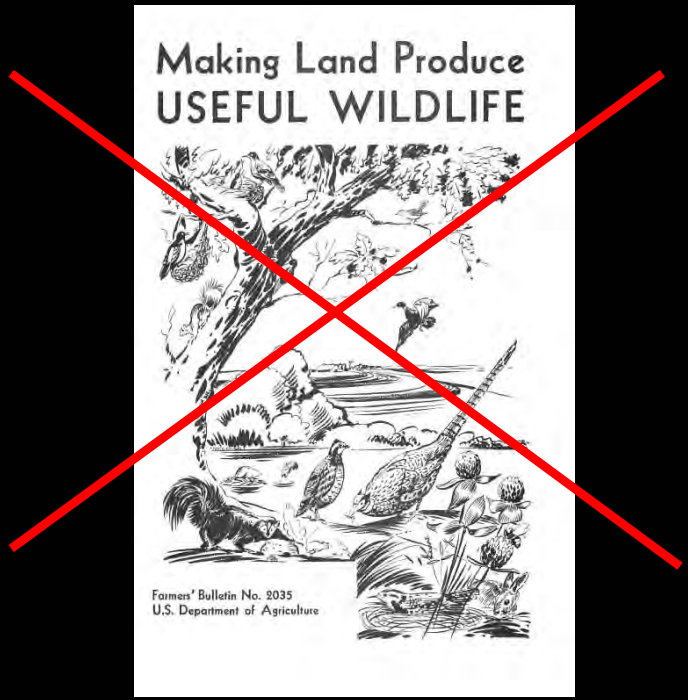
Need to promote biodiversity in areas not traditionally a focus of conservation organizations.

Creating better cities: how biodiversity and ecosystem functioning enhance urban residents' wellbeing

Lucy Taylor · Dieter F. Hochuli

Urban Ecosystems, 2014

Need to reestablish our relationship to community rather than commodity.



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