

R H O D E I S L A N D



NATURAL HISTORY SURVEY

*Providing Ecosystem Science and Information*

David W. Gregg  
*Executive Director*

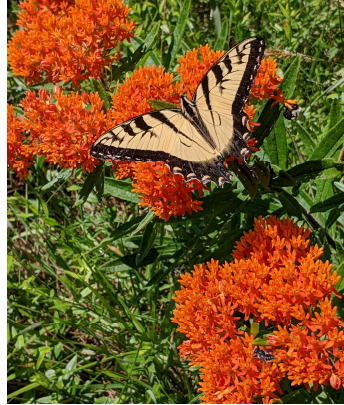
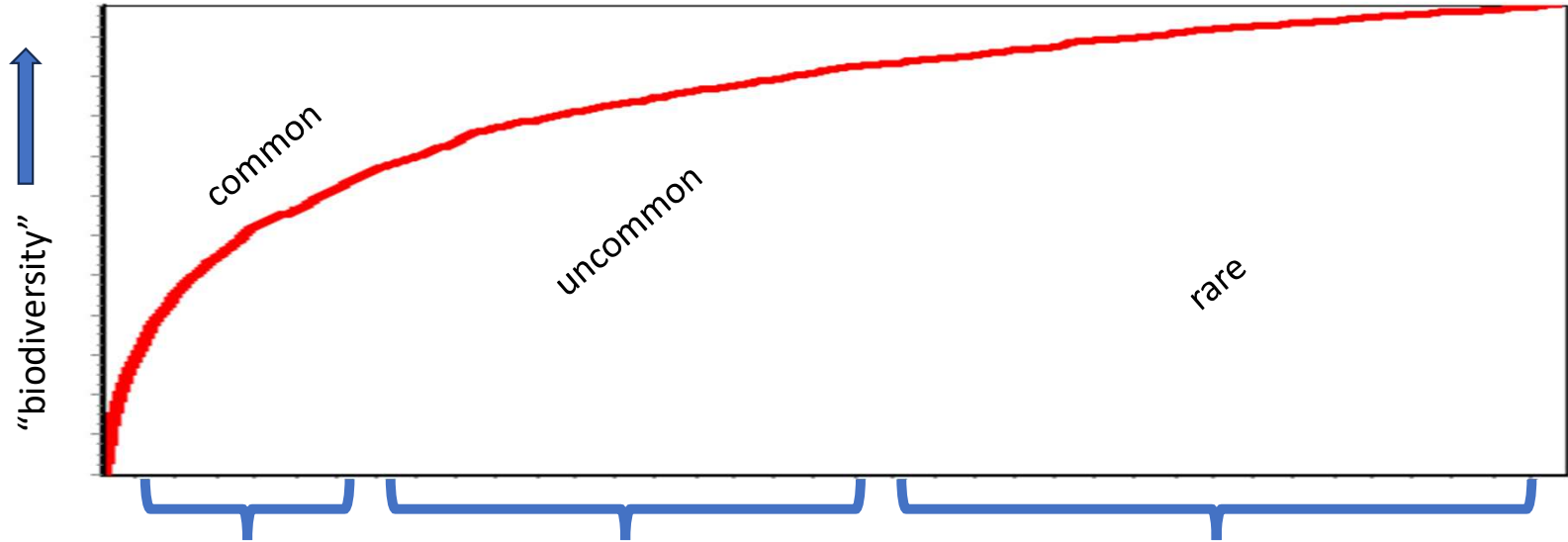
# The Importance of Species Conservation: Save the Stage AND the Actors

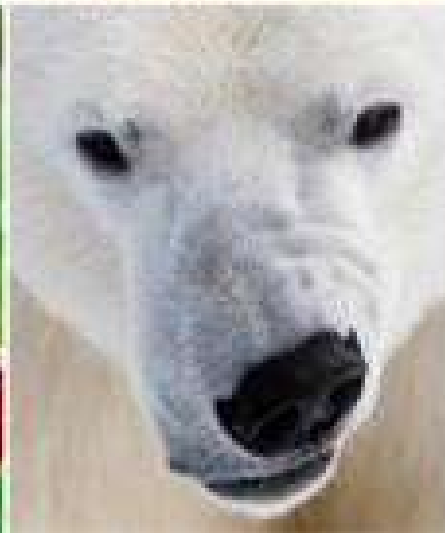
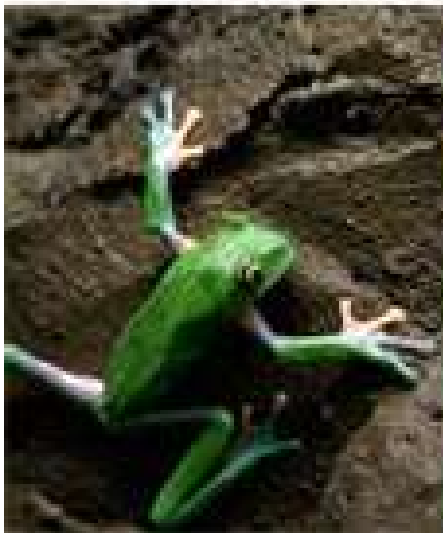
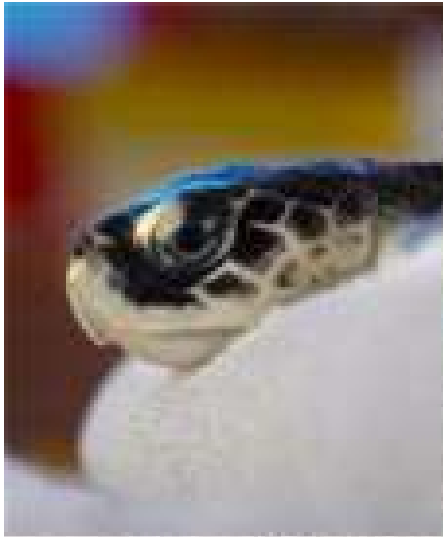


RI BioBlitz 2015; Little Compton









<http://www.theguardian.com/environment/series/biodiversity-100>



<http://marinebio.org/oceans/conservation/biodiversity.asp>



National Oceanic and Atmospheric Administration (NOAA), Northeast Fisheries Science Center



Photo courtesy of Paul Roselli



What is biodiversity?

**SPECIES**  
and **NATURAL COMMUNITIES**  
in **SPACE** and **TIME**

What is biodiversity?

**SPECIES**  
and **NATURAL COMMUNITIES**  
in **SPACE** and **TIME**



*“There was a marbled salamander  
in my back yard on Thursday!”*

What is biodiversity?

**SPECIES**  
and **NATURAL COMMUNITIES**  
in **SPACE** and **TIME**

*“There was a marbled salamander  
in my back yard on Thursday!”*



*“...and it was looking fat and happy!”*



*“...and I see it and others there all the time!”*





August 2014



July 2020



The Nature Conservancy RI archives





Science & News from the Rhode Island Natural History Survey

## Rhode Island Naturalist

Volume 11 • Number 2 • November 2004

**What's Inside...**

- Habitat Relationships of "Wintered" Wading in Narragansett Bay
- Freshwater Mussel Colonies & Culture
- Birding 2004
- Notes from Field and Study
- Ecological Inventory, Monitoring, & Assessment Report

**Estimating Fish Predation by Cormorants in the Narragansett Bay Estuary**  
 BY DEBORAH P. FRENCH MCCAY AND JILL J. ROWE

Cormorant and other seabird populations have increased substantially in the Narragansett Bay Estuary (NBE), including Nantuxet Bay, since the late 1990s. Based on estimated ratios of nest-brood to breeding rates, the NBE population of the Double-crested Cormorant in the late 1990s was about 11,000 birds, a level where it appears to remain at present. Estimates of numbers of the Great Cormorant (*Phalacrocorax carolinensis*) in the NBE are not available, but since they primarily migrate through the area in spring and fall and do not breed in NBE, their fish consumption would be much lower than for the Double-crested Cormorant population. About 85% of the Double-crested Cormorants nest in the Sakonnet River, with 14% of the total population nesting at Little Gould Island in the upper part of the Sakonnet River and 51% nesting around Sakonnet Point (Figure 2). The majority of the remains 13% of the population nest at Hope Island in the West Passage of Narragansett Bay. Cormorants fly up to 16 km to feed at water shallows less than 8 m. The relatively large population associated with the Sakonnet River nesting colonies most likely feeds in Mount Hope Bay and the Sakonnet River, where shallow-water foraging areas are much more extensive than in nearby waters of the lower East Passage of Narragansett Bay. Thus, production pressure on fish is likely higher in Mount Hope Bay and the Sakonnet River than in the East and West Passages of Narragansett Bay. Fish consumption rates per day were compared those estimates to harvest rates by fishing and other sources of mortality.

Rhode Island Natural History Survey

LISA L. GOULD  
 RICHARD W. ENSER  
 RICHARD E. CHAMPLIN  
 IRENE H. STUCKEY

RHODE ISLAND NATURAL HISTORY SURVEY

PETER V. AUGUST  
 RICHARD W. ENSER  
 LISA L. GOULD

## VERTEBRATES OF RHODE ISLAND

Volume 2 of THE BIOTA OF RHODE ISLAND

RHODE ISLAND NATURAL HISTORY SURVEY

LISA L. GOULD  
 RICHARD W. ENSER  
 RICHARD E. CHAMPLIN  
 IRENE H. STUCKEY

## VASCULAR FLORA OF RHODE ISLAND

A List of Native and Naturalized Plants

Volume 1 of THE BIOTA OF RHODE ISLAND

RHODE ISLAND NATURAL HISTORY SURVEY

Providing Ecosystem Science and Information

Edited by PETER W. PATON • LISA L. GOULD • PETER V. AUGUST

## THE ECOLOGY OF BLOCK ISLAND

Proceedings of the Rhode Island Natural History Survey Conference • October 28, 2000

THE RHODE ISLAND NATURAL HISTORY SURVEY

THE RHODE ISLAND NATURAL HISTORY SURVEY

RHODE ISLAND GEOLOGY for the NON-GEOLOGIST by Alonzo W. Quinn

Geological Relations and Interesting Geological Locations in "Little Rhode Island".

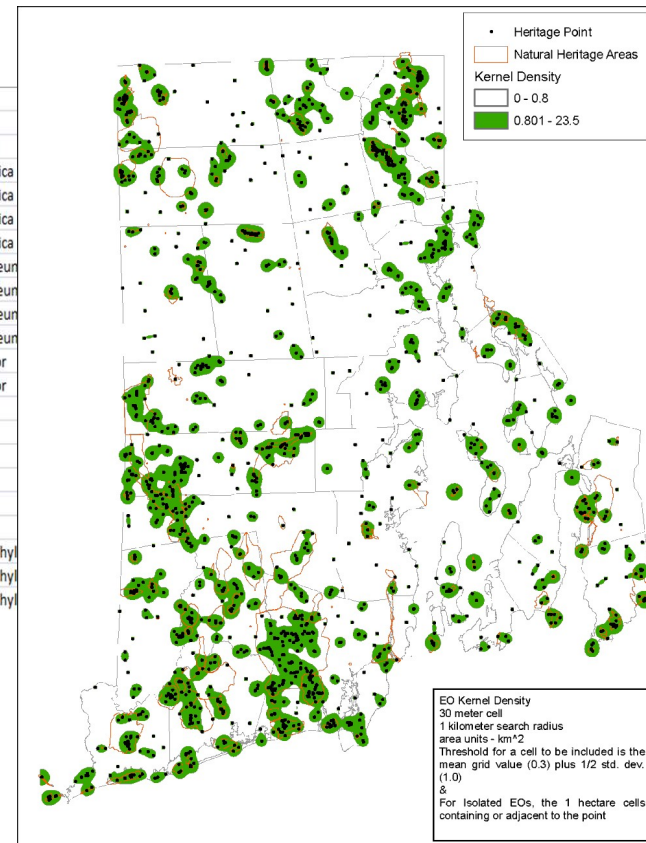
Challenges of the Narragansett Point

The Science and Culture of the North



## Rhode Island Natural Heritage Program Database

1297	863	PDAST8P1M3*001*RI	1069 08/21/1921	Solidago	rigida
1298	864	PDAST8P1M3*002*RI	1070 00/00/1868	Solidago	rigida
1299	281	PDAST8P2P0*001*RI	1072 09/15/1913	Solidago	elliottii
1300	689	PDAST8XOC1*001*RI	859 00/00/1979	Ageratina	aromatica
1301	511	PDAST8XOC1*002*RI	598 09/08/1946	Ageratina	aromatica
1302	241	PDAST8XOC1*003*RI	204 08/29/1967	Ageratina	aromatica
1303	242	PDAST8XOC1*004*RI	205 08/30/1941	Ageratina	aromatica
1304	243	PDASTDF040*003*RI	208 07/00/1878	Gnaphalium	purpureum
1305	485	PDASTDF040*004*RI	548 08/20/1913	Gnaphalium	purpureum
1306	97	PDASTDF040*008*RI	470 08/20/1913	Gnaphalium	purpureum
1307	98	PDASTDF040*009*RI	471 09/14/1913	Gnaphalium	purpureum
1308	690	PDASTE80A0*001*RI	860 10/04/1925	Aster	concolor
1309	796	PDASTE80A0*002*RI	1578 09/13/1924	Aster	concolor
1310	1639	PDASTE80Y2*001*RI	2603 09/28/1921	Aster	laevis
1311	1399	PDASTE80Y2*002*RI	2174 10/27/1925	Aster	laevis
1312	1433	PDASTE80Y2*003*RI	2175 10/17/1906	Aster	laevis
1313	1318	PDASTE80Y2*004*RI	1921 10/13/1924	Aster	laevis
1314	1663	PDASTE80Y2*005*RI	2645 00/00/1979	Aster	laevis
1315	1300	PDASTE80Y2*006*RI	1875 00/00/1999	Aster	laevis
1316	1301	PDASTE80E0*001*RI	1876 09/19/1919	Eurybia	macrophyll
1317	1302	PDASTE80E0*002*RI	1877 08/00/1884	Eurybia	macrophyll
1318	1303	PDASTE80E0*003*RI	1878 09/20/1884	Eurybia	macrophyll

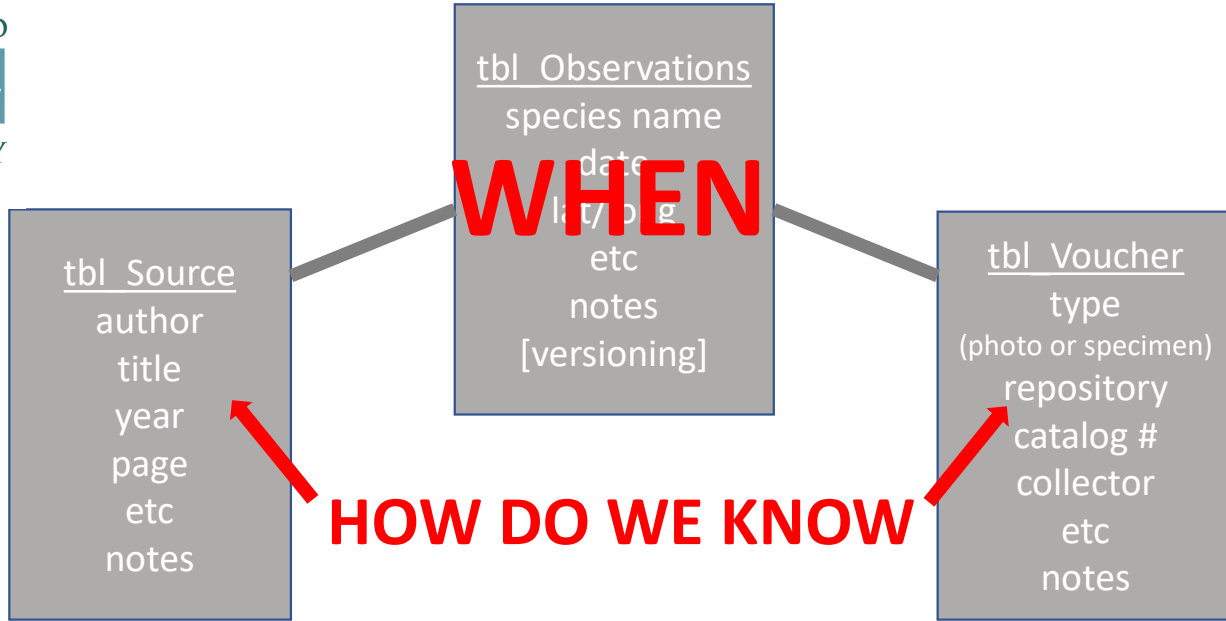


02 M	South	1 F
96 M	Warwick	1 F
98 M	New	1 F
97 S	South	1 F
97 M	Cumberla	1 F
96 S	West	1 F
99 M	Cumberla	1 F
02 M	North	2 F
01 S	New	2 F
01 M	New	2 F
02 M	New	2 F
96 M	South	2 F
98 M	Charlesto	2 F
96 M	North	2 F
03 S	East	2 F
01 M	East	2 F
96 M	Lincoln	2 F
96 S	North	2 F
99 S	West	2 F
00 M	Lincoln	2 F
98 M	Smithfield	2 F
97 M	Cumberla	2 F

**BORIIS2.0**

*Biota of RI  
 Information System*

COMING SOON



**WHEN**

**HOW DO WE KNOW**

**WHAT**

**WHERE**

**WHO**

tlu\_Taxon  
 latin binomial  
 synonyms  
 Heritage status  
 etc  
 notes

tlu\_Locations  
 etc  
 notes

tbl\_person  
 name(s)  
 deceased y/n  
 areas of expertise  
 etc  
 notes

## “Natural History”

... the scientific study of plants and animals in their natural environments. It is concerned with levels of organization from the individual organism to the ecosystem, and stresses identification, life history, distribution, abundance, and inter-relationships.

—S.G. Herman, 2002, JWM 66(4), 933 ff.

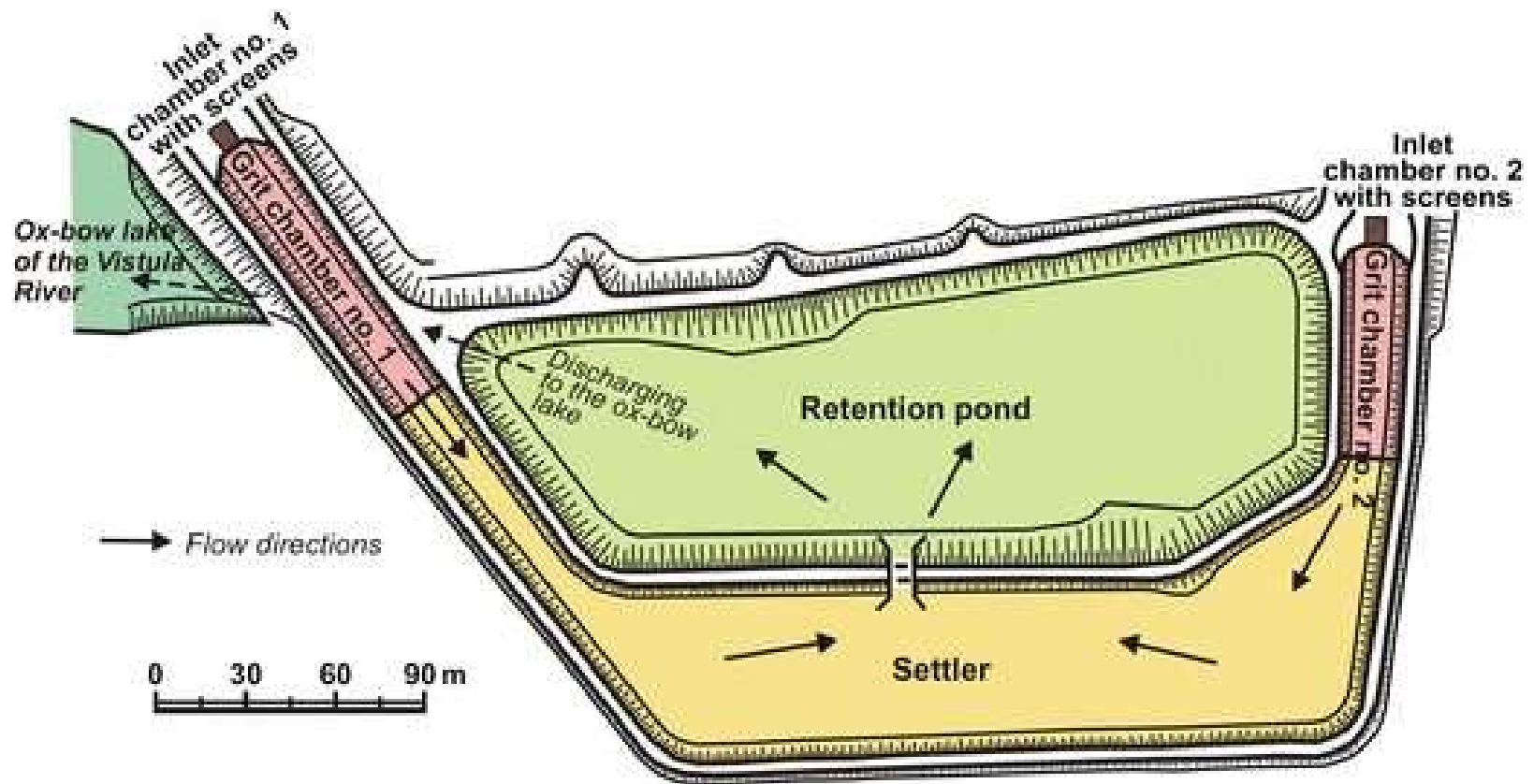
### Natural History Values:

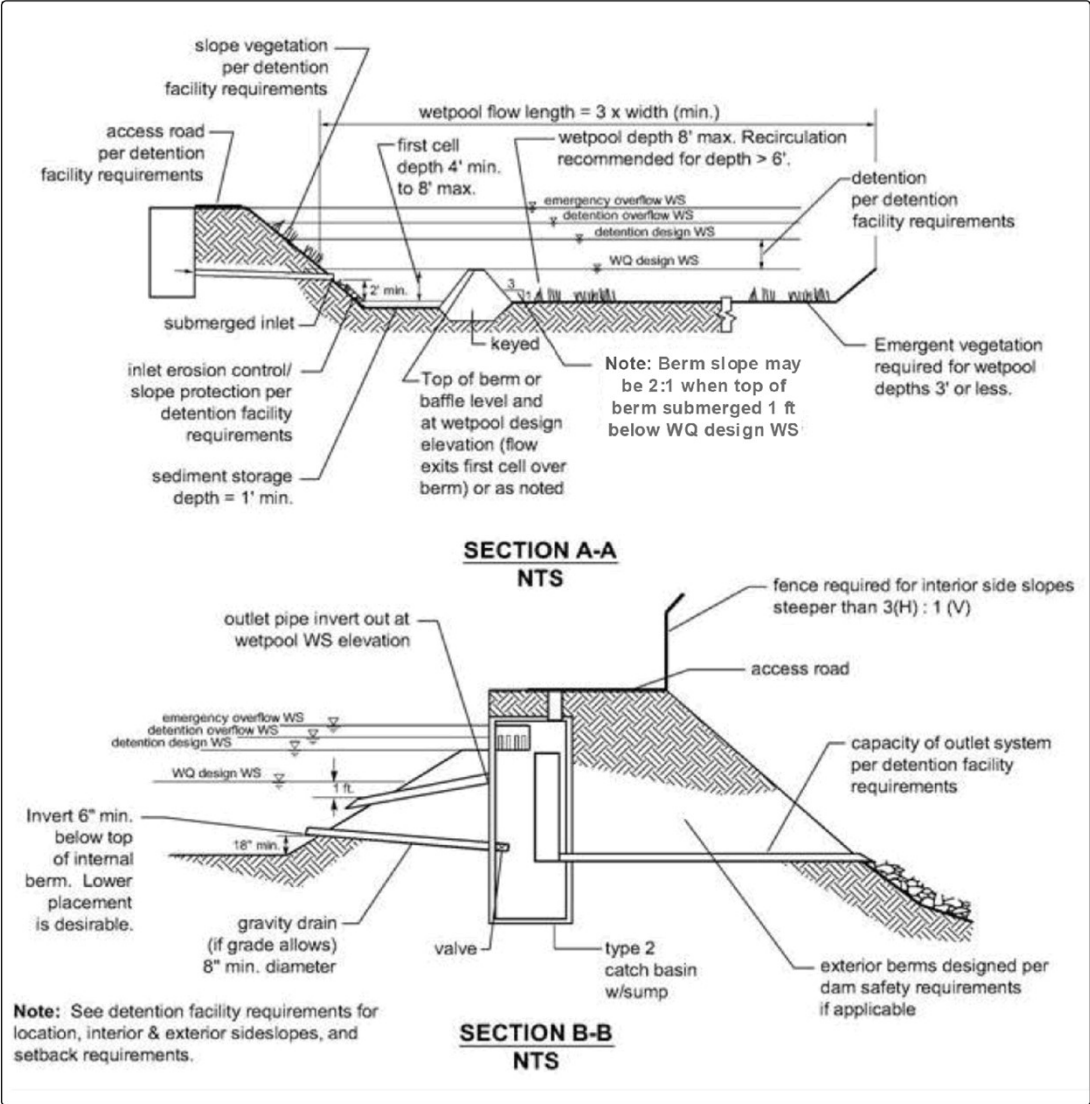
- Study Living Organisms in the Natural Habitat
- Study Things Nearby to Learn about the World
- With Appropriate Support, Any Curious Observer can Contribute

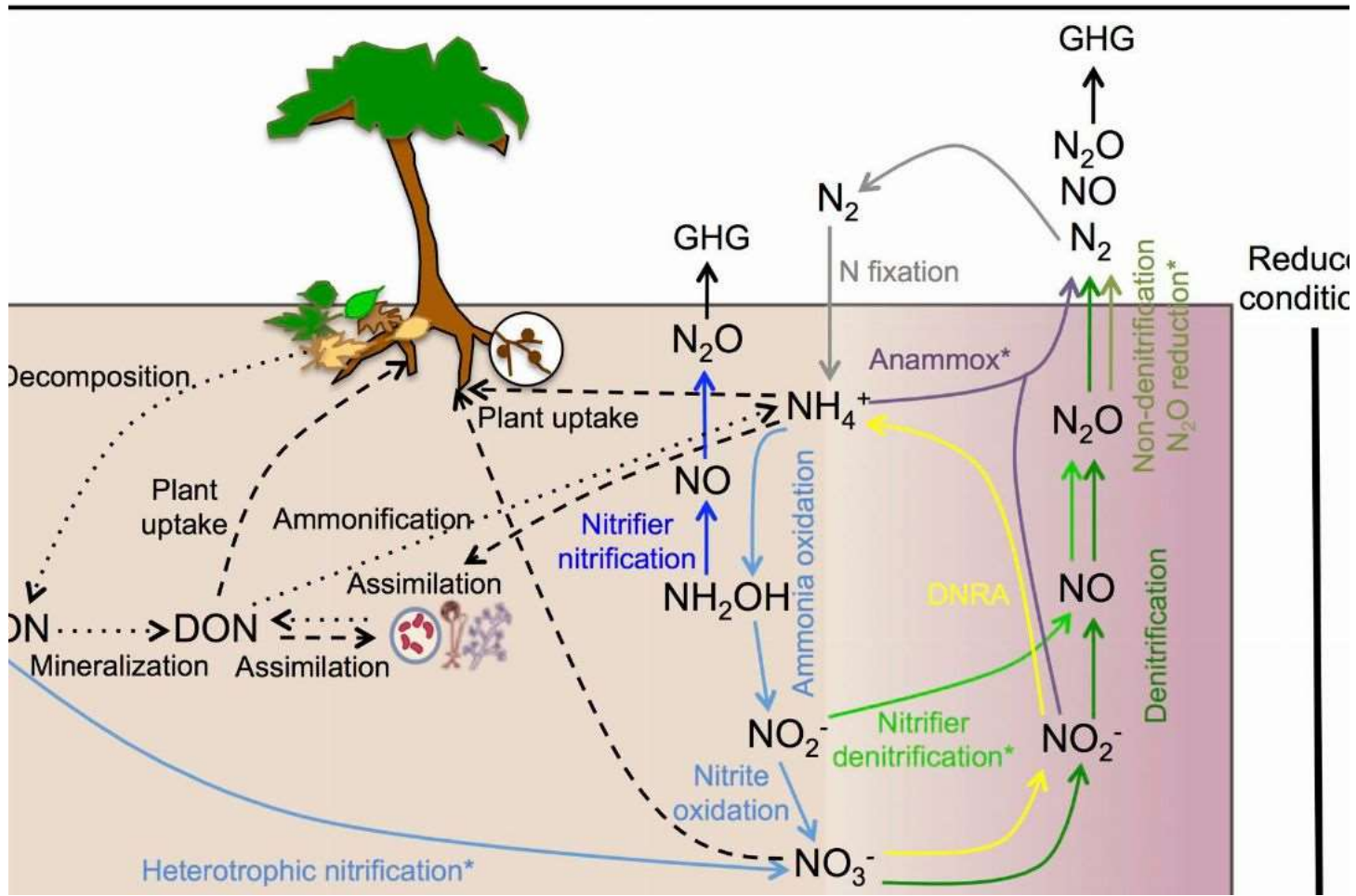




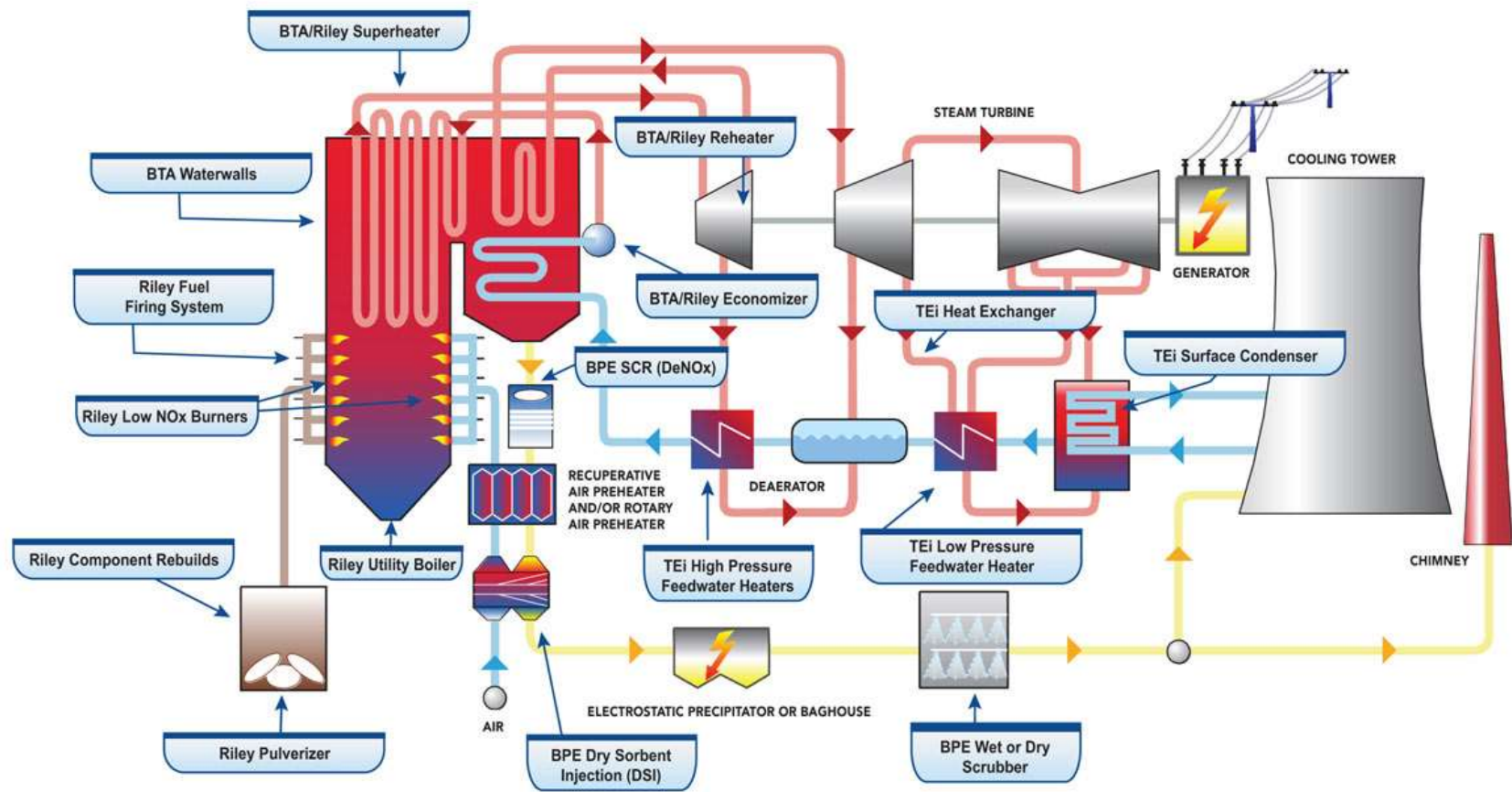
tree team, RI BioBlitz 2023 Narragansett Indian Reservation







<https://www.climate-policy-watcher.org/nitrification/benefits-of-denitrification.html>











marine invert team, RI BioBlitz 2022 East Bay Bike Path



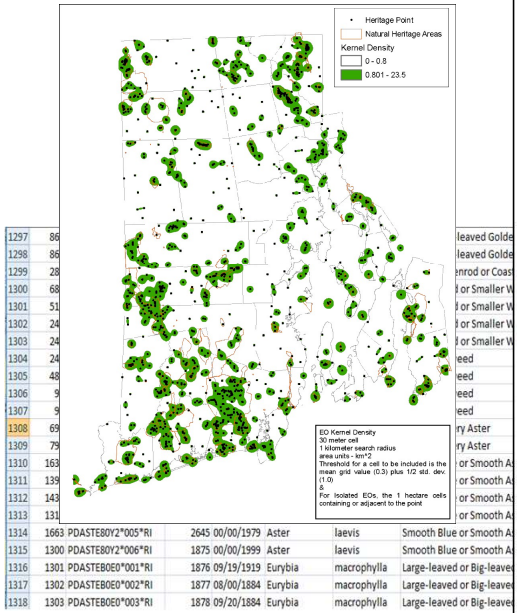
R H O D E I S L A N D



NATURAL HISTORY SURVEY

Providing Ecosystem Science and Information

Natural Heritage Methodology



RARE NATIVE ANIMALS OF RHODE ISLAND

Revised: March, 2006

ABOUT THIS LIST

The list is divided by vertebrates and invertebrates and is arranged taxonomically according to the recognized authority cited before each group. Appropriate synonymy is included where names have changed since publication of the cited authority.

The Natural Heritage Program's *Rare Native Plants of Rhode Island* includes an estimate of the number of "extant populations" for each listed plant species, a figure which has been helpful in assessing the health of each species. Because animals are mobile, some exhibiting annual long-distance migrations, it is not possible to obtain population index that can be applied to all animal groups. The status assigned to each species (see definition below) provides some indication of its range, relative abundance, and vulnerability to decline. More specific pertinent data is available from the Natural Heritage Program, the Rhode Island Endangered Species Program and the Rhode Island Natural History Survey.

**STATUS.** The status of each species is designated by letter codes as defined:

**(FE) Federally Endangered** (7 species currently listed)

**(FT) Federally Threatened** (2 species currently listed)

**(SE) State Endangered** Native species in imminent danger of extirpation from Rhode Island. The following taxa may meet one or more of the following criteria:

1. Formerly considered by the U. S. Fish and Wildlife Service for Federal listing as endangered or threatened.
2. Known from an estimated 1-2 total populations in the state.
3. Apparently globally rare or threatened; estimated at 100 or fewer populations range-wide.

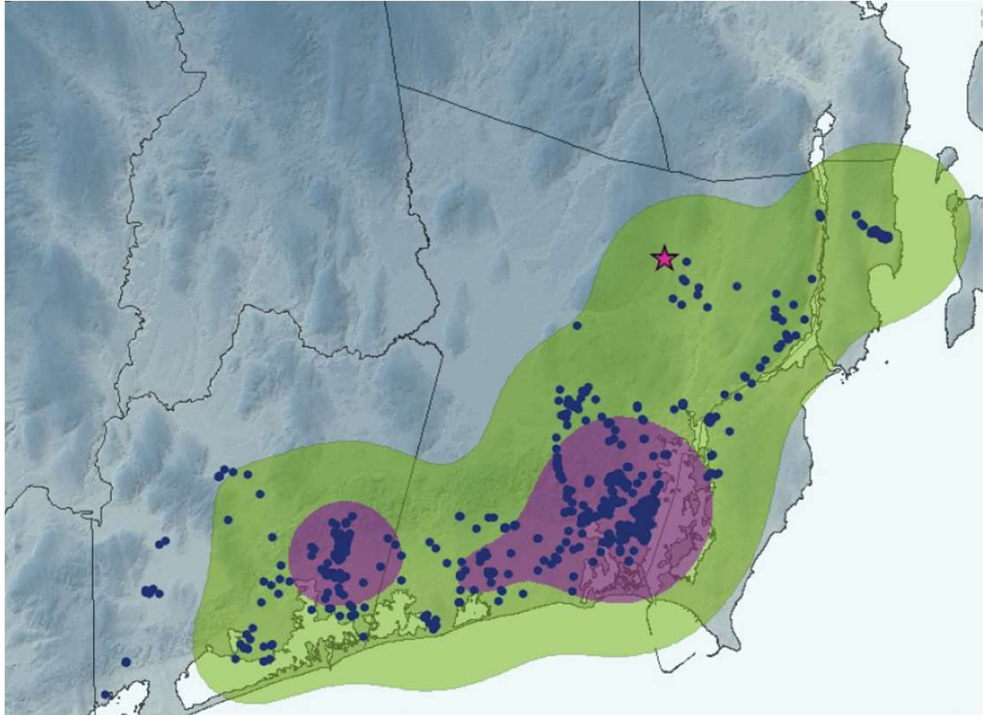
Animals listed as State Endangered are protected under the provisions of the Rhode Island State Endangered Species Act, Title 20 of the General Laws of the State of Rhode Island. This law state (20-37-3):

"No person shall buy, sell, offer for sale, store, transport, export, or otherwise traffic in any animal or plant or any part of any animal or plant whether living or dead, processed, manufactured, preserved or raw if such animal or plant has been declared to be an endangered species by either the United States government or the State of Rhode Island."



Syracuse News  
ArcPublishing.com

RINHS



Rhode Island DEM DFW/URI Amy Mayer

**Wildlife Action Plan**  
 2005 — 2015 — 2025



Amanda Freitas, WAP Liaison  
 RINHS staff

Species of Greatest Conservation Need (SGCN)  
 Key Habitats  
 Key Threats

Pitch Pine Woodland/Barren

GCN HABITATS

**Rhode Island Wildlife Action Plan**

Adapted communities with a variable  
 ory of tall shrubs, especially scrub  
 r heaths. A variable amount of  
 ending on frequency of fire. A more  
 oster the growth of stunted pines,  
 bare sand. Scrub oak stands may  
 g areas where cold-air drainage  
 identifies coastal and interior  
 lar in structure and composition,

Wildlife Conservation Guide:  
 Rhode Island's Wildlife Action Plan in Your Community

A Guide for Rhode Island Communities, Conservation Groups, and Citizens  
 Working to Protect Wildlife for the Health of Our Communities and Future Generations

"Nature is not a place to visit. It is home."  
 -Gary Snyder



Canada Ministry of the Environment and Climate Change



Wikipedia: GFDL



RINHS: Frances Topping



RINHS: BioBlitz 2014



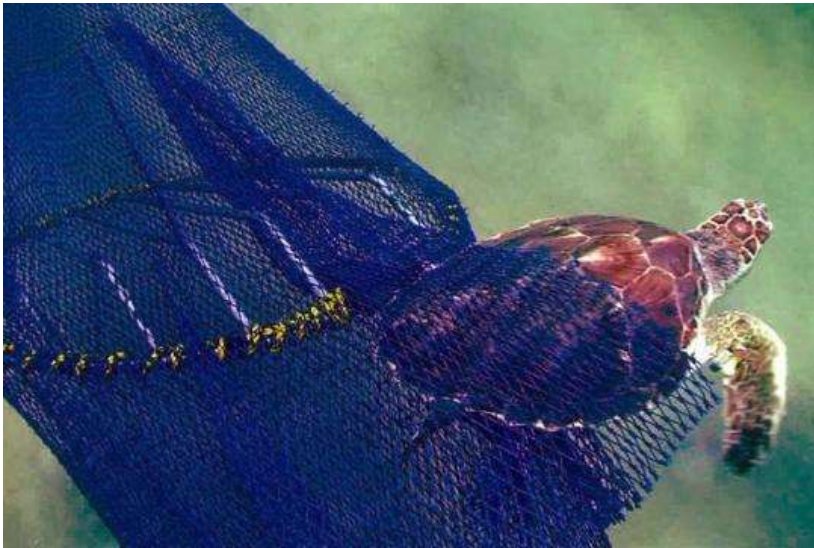
R H O D E I S L A N D



NATURAL HISTORY SURVEY

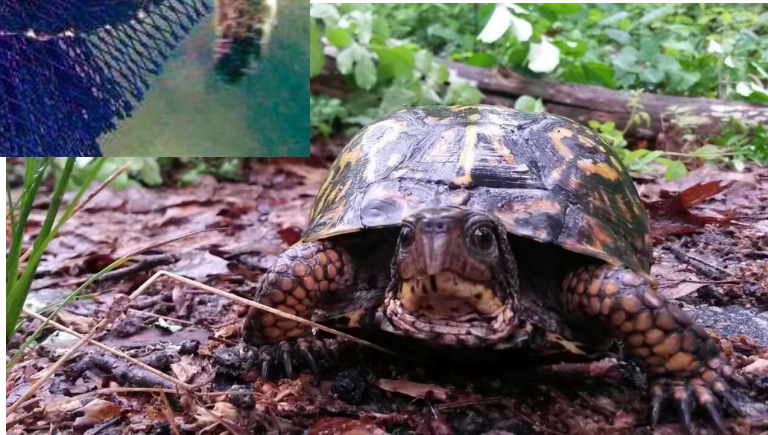
*Providing Ecosystem Science and Information*

## Mitigate stressors



fishing by-catch

poaching



Christmas greens law



## Ecological Land Units (ELUs)

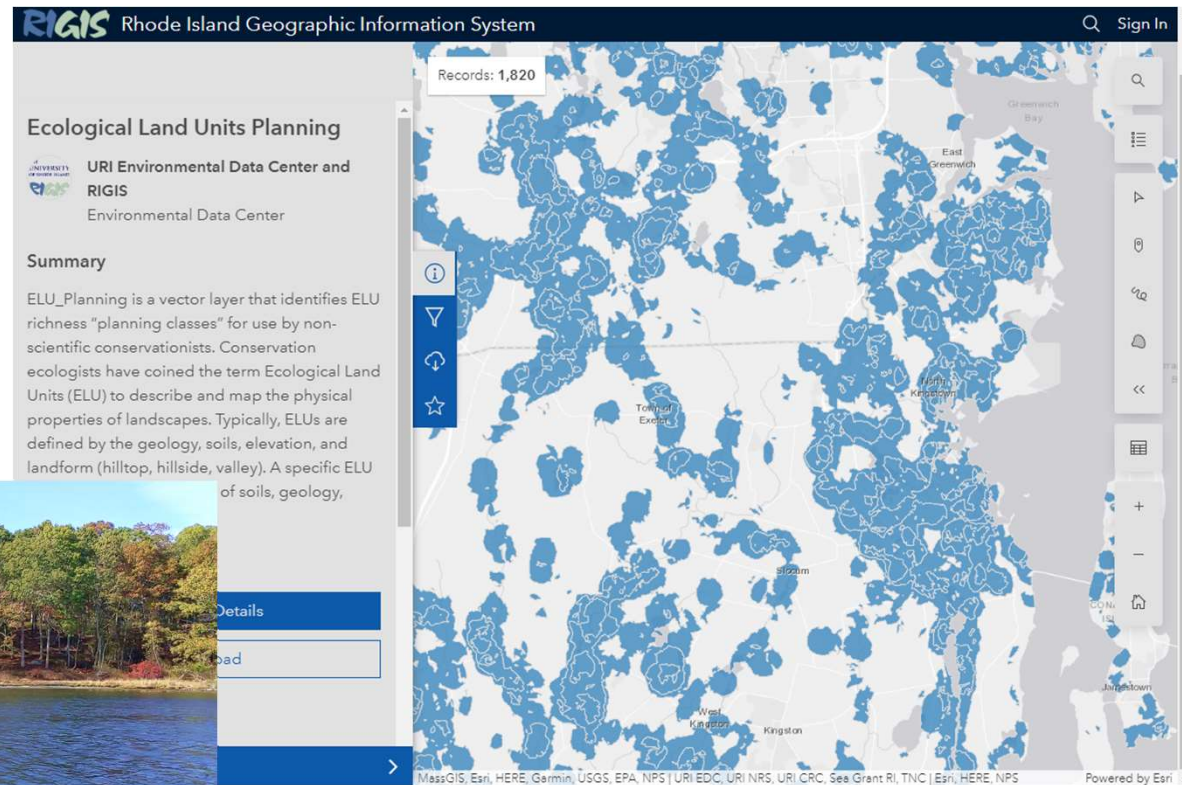
### geophysical setting

- land form
- geomorphological composition
  - soil
  - hydrology

statistically correlated to  
species biodiversity



RINHS

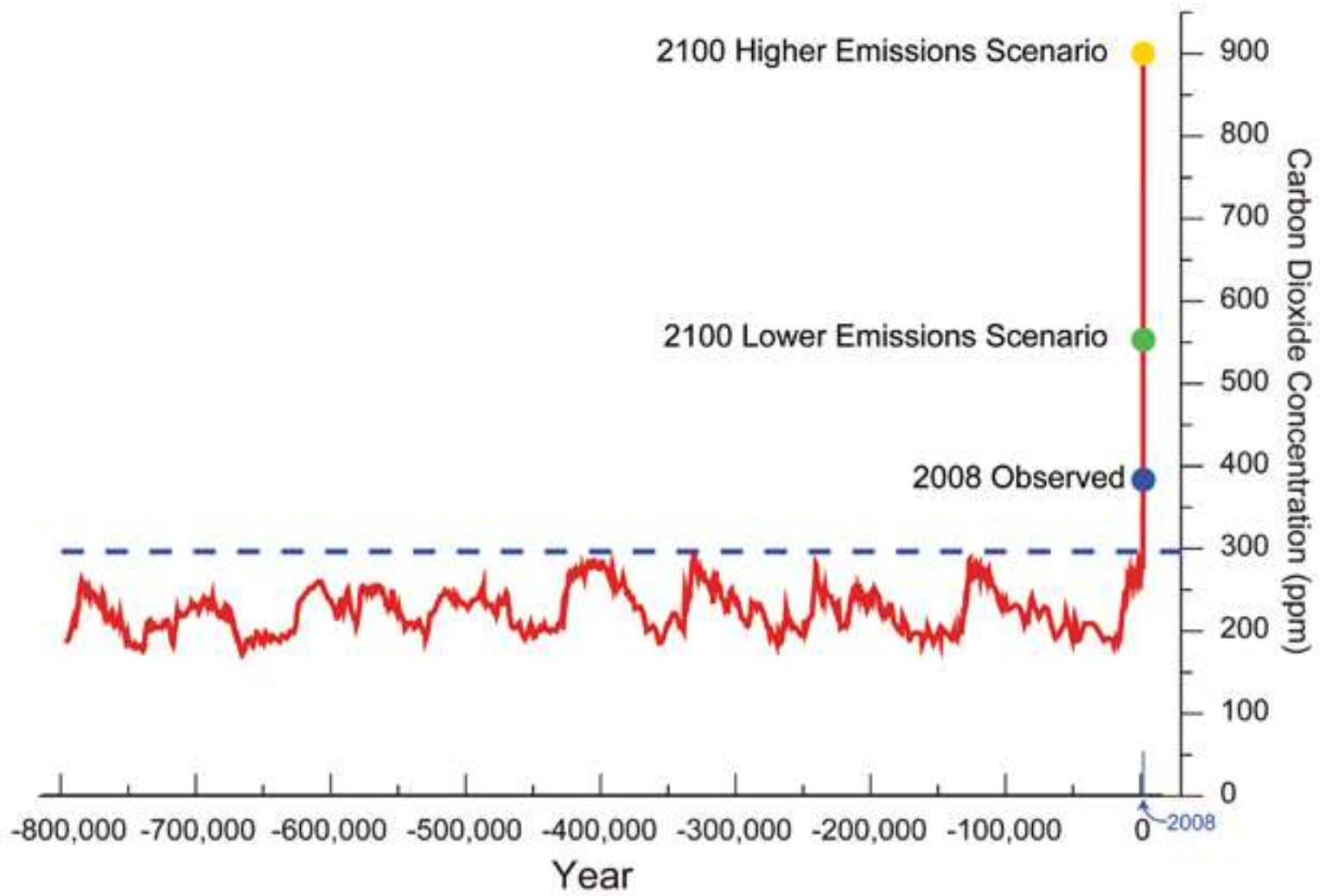


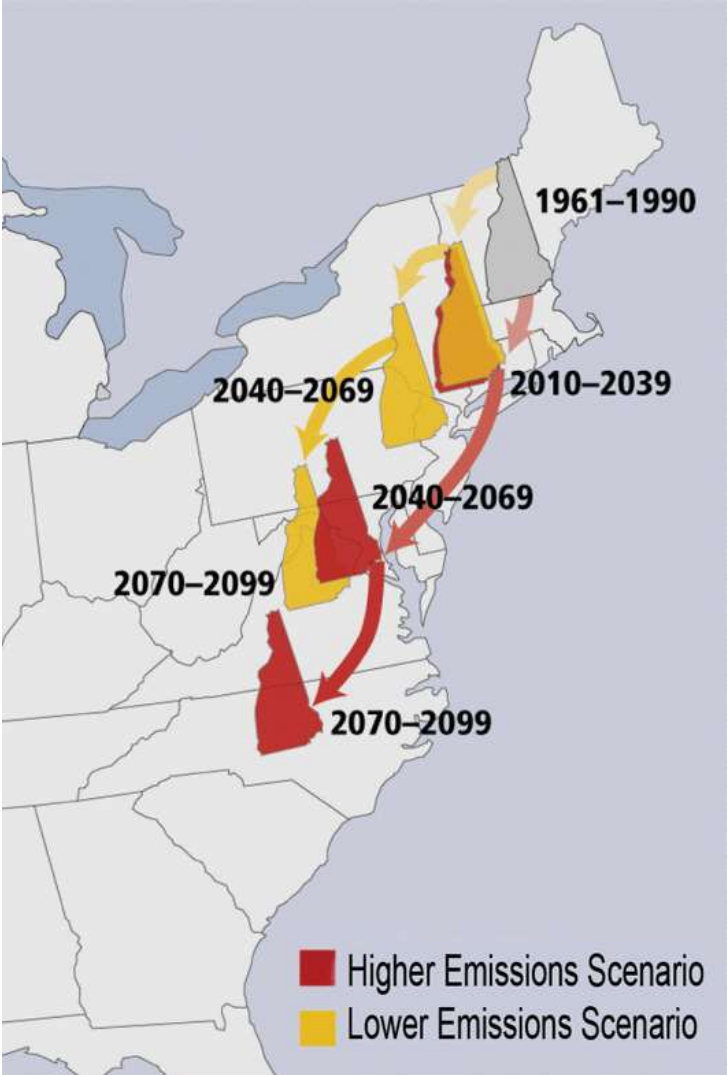


model

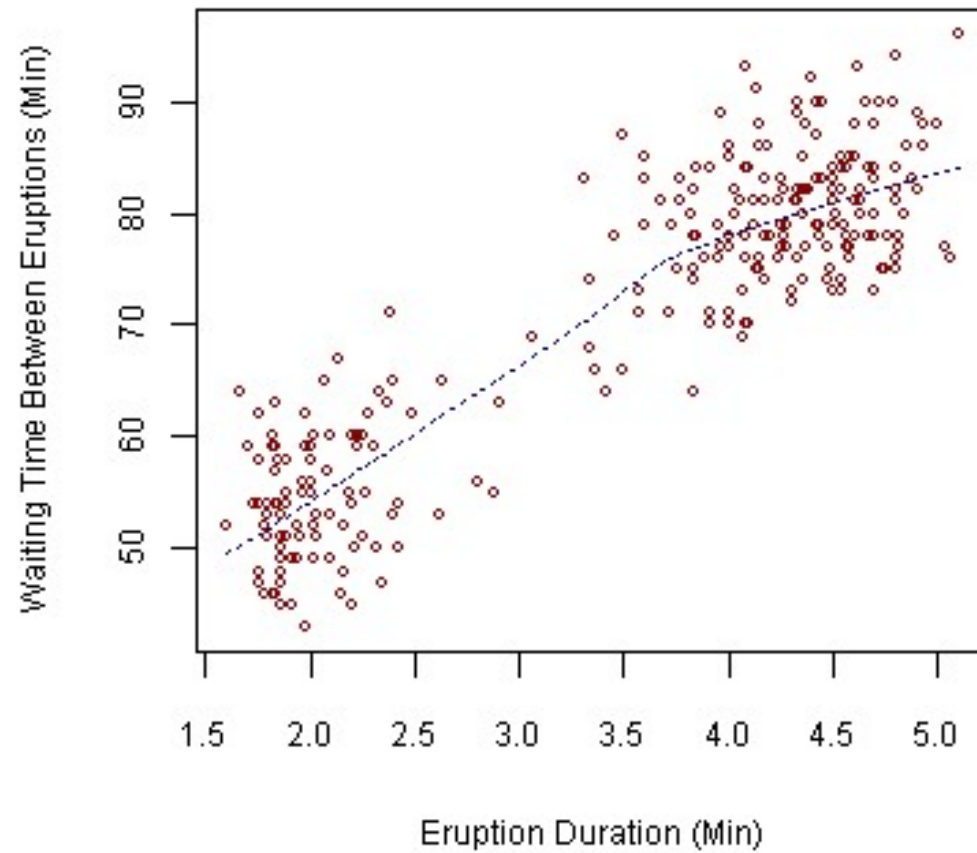
real life





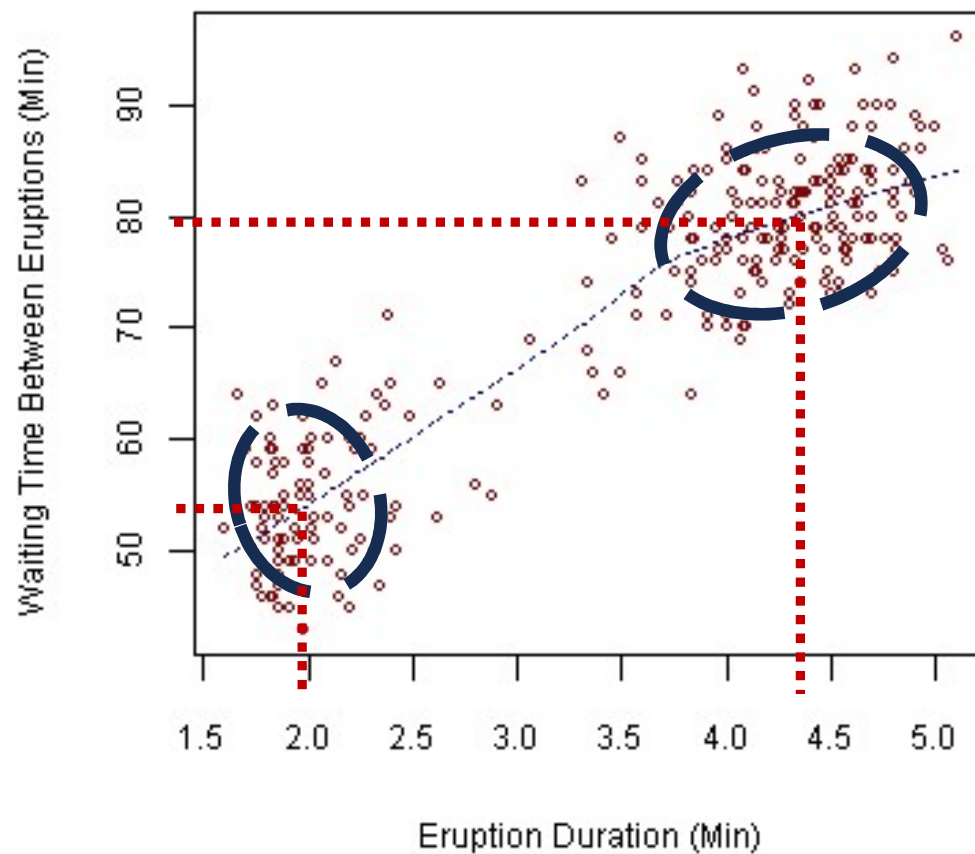


## Old Faithful Eruptions

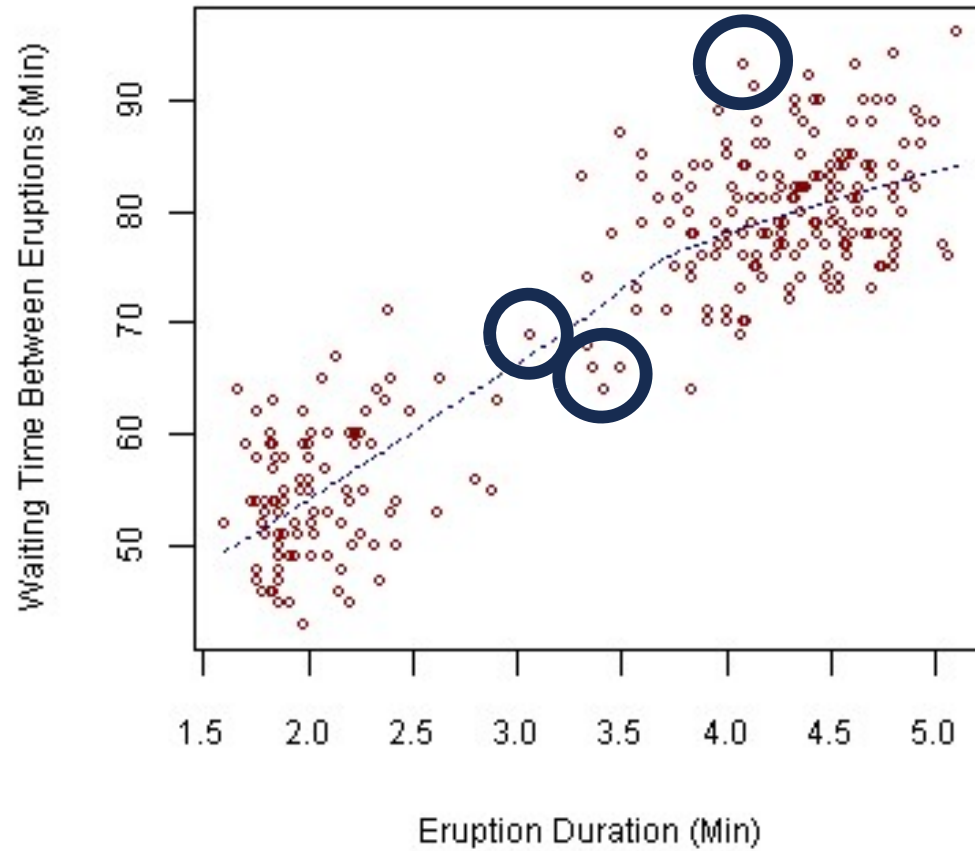




# Old Faithful Eruptions



# Old Faithful Eruptions



Positive Deviance





BioBlitz ant team



RI BioBlitz 2022: East Bay Bike Path

<https://www.nycgovparks.org/facilities/images/indoor-pools-header.jpg>



swimmable



fishable

[https://www.wmicentral.com/news/arizona\\_news/kids-fishing-derby](https://www.wmicentral.com/news/arizona_news/kids-fishing-derby)

<https://www.nycgovparks.org/facilities/images/indoor-pools-header.jpg>



swir

fishable



[https://www.wmicentral.com/news/arizona\\_news/kids-fishing-derby](https://www.wmicentral.com/news/arizona_news/kids-fishing-derby)



Hottonia inflata. Photo: RINHS