


A wide-angle photograph of a mountain ridge. Three hikers are visible in the middle ground, walking across the ridge. The hiker on the left is wearing a blue jacket and a backpack, using a trekking pole. The hiker in the center is wearing a yellow jacket. The hiker on the right is wearing a dark jacket and is crouching down. The foreground is covered in tall, dry grass and some green vegetation. The background shows rolling hills and a sky with scattered clouds.

CONSERVING PLANT DIVERSITY IN NEW HAMPSHIRE

NH Natural Heritage Bureau
Sabrina Stanwood, Administrator
Amy Lamb, Data Manager



Topics

- About NHB
 - What are NH exemplary natural communities
 - Learn more about NHB's database
 - How to use the DataCheck tool
 - Landowner requests for NHB data
 - Data Sharing Agreements
 - NHB's recommendations to protect NH's biodiversity (what you can do, and how we can help!)
- 



ABOUT NHB

Who we are

- ▶ Dept. of Natural & Cultural Resources (DNCR)
 - ▶ Division of Forests & Lands
 - ▶ **Natural Heritage Bureau**

- Bureau Administrator – Sabrina Stanwood
- State Botanist/Chief Ecologist – Bill Nichols
- Data Manager – Amy Lamb
- Ecologist/Wildlife Specialist – Pete Bowman
- Ecologist – Jessica Bouchard
- Environmental Reviewer – Maddie Severance
- Associate Ecologist – Laura Costello
- Ecological Information Specialist – Ryan Esch *



NH Natural Heritage Bureau (NHB)

- Mission mandated by the **NH Native Plant Protection Act (1987) RSA 217-A:**
 - Develop and recommend measures for the protection, conservation, enhancement and management of NH's native plant species and exemplary natural communities.
 - Help to protect NH's biodiversity by collecting and analyzing data on the status, location, and distribution of rare or declining native plant species and natural communities.
 - Serve as a resource for landowners and land managers
- Largely self-funded through grants



Small whorled pogonia (*Isotria medeoloides*)

Determining NH's Rare Plant Species

- Threats, trends, species range, number of species records
 - Analyzing NHB database
 - Literature review
 - Herbaria research
 - Field surveys
 - Input from local and regional botanists

Endangered	Threatened
331	85
Total:	416



Alpine milk-vetch (*Astragalus alpinus* var. *brunetianus*)

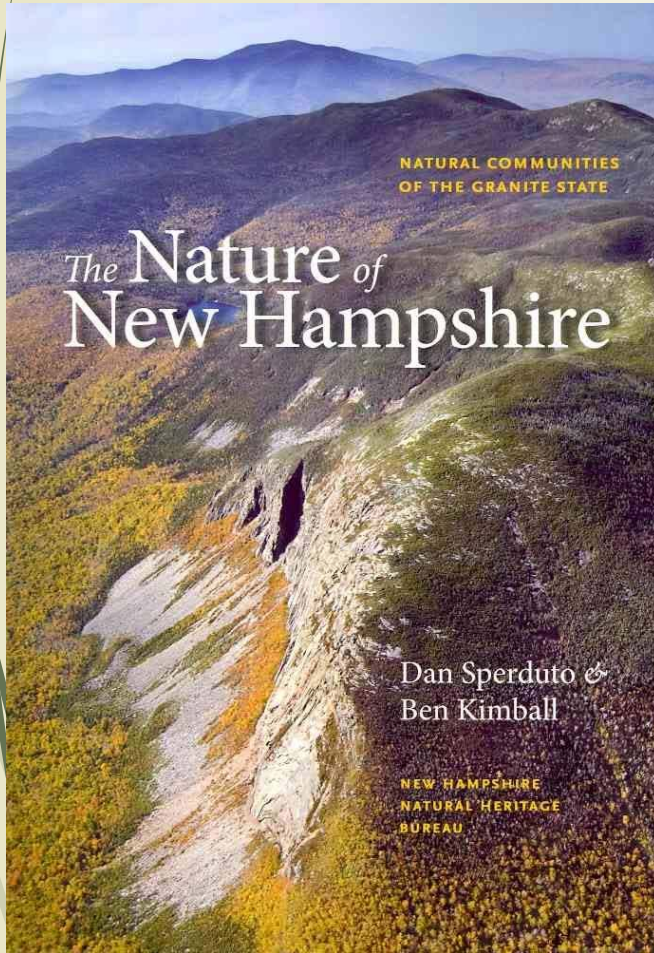
From Extirpated to Endangered.

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<https://gobotany.newenglandwild.org/species/astragalus/alpinus/>

Classifying NH's Natural Communities

- Natural Community: a recurring assemblage of plants and animals found in a particular physical environment
- Over 200 types of natural communities tracked in NH



Natural Communities
of
New Hampshire

Second Edition

Daniel D. Sperduto
William F. Nichols

New Hampshire Natural Heritage Bureau



Circumneutral red cedar rocky outcrop

Exemplary Natural Communities

- ▶ Exemplary Natural Communities (ENCs) are natural communities that are:
 - ▶ So rare that all examples are considered exemplary.
 - ▶ Excellent examples of common natural community types.
- ▶ Ecological systems are assemblages of multiple natural community types



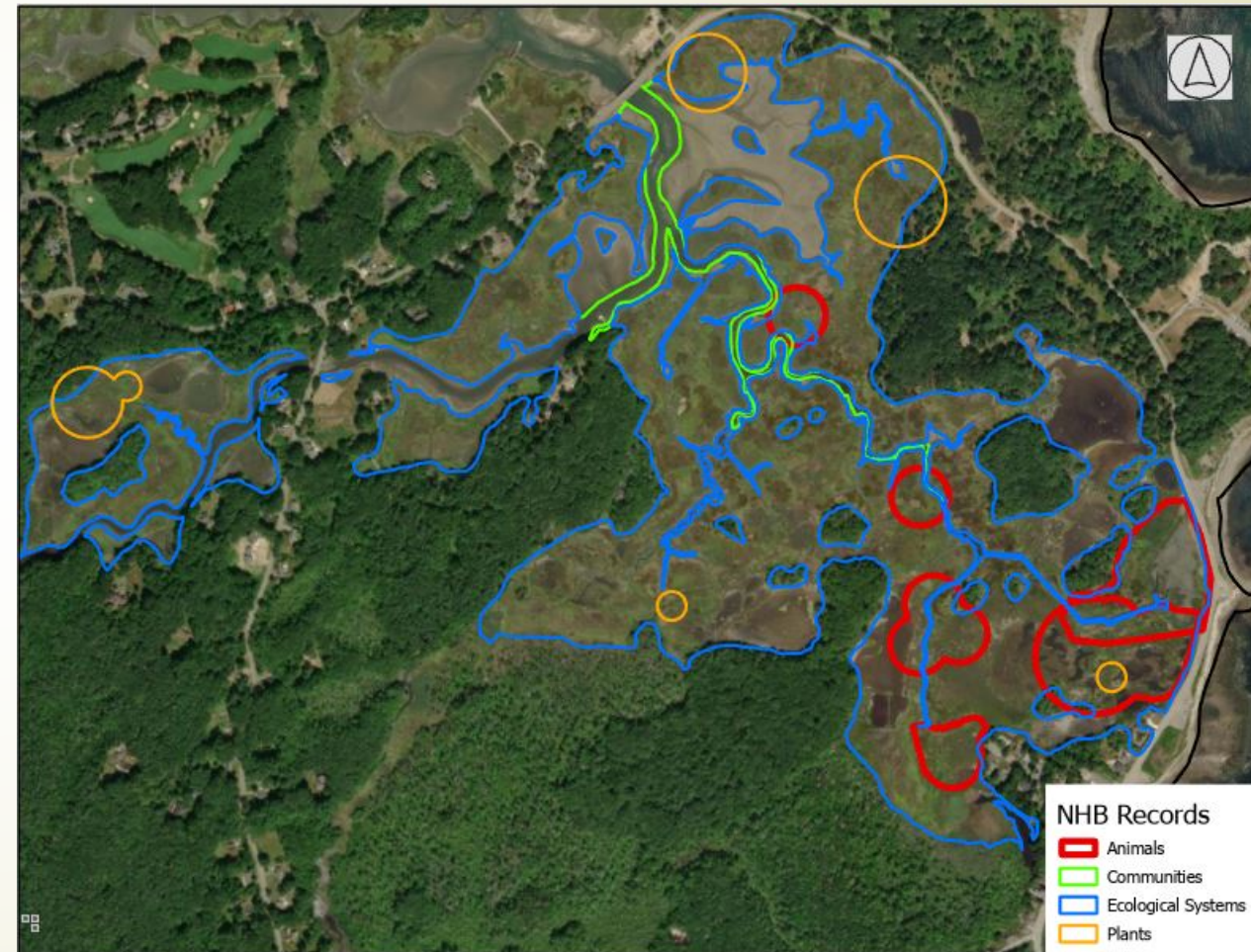
Sugar maple - beech - yellow birch forest (S5)
in a Northern hardwood - conifer forest system



Inland Atlantic white cedar swamp (S1)

Why Natural Communities & Ecological Systems?

- There is so much that we don't know about NH's biodiversity!
- Natural communities and ecological systems are:
 - Assemblages of many species – plants, animals, fungi, etc.
 - Contain many physical conditions and habitats
- Protecting enough high-quality examples of all natural community types will lead to protecting most species in NH!
 - “Coarse filter” approach to biodiversity conservation
 - “Fine filter” approach targets conservation of rare species



NHB Database

- ▶ Threatened & Endangered plants
 - ▶ **3201 records**
- ▶ Exemplary natural communities & ecological systems
 - ▶ **1123 records**
- ▶ Listed & tracked wildlife
 - ▶ **3869 records**

Greater fringed-gentian (*Gentianopsis crinita*)



NH Fish & Game Partnership

- Data Management
- Wildlife Action Plan and Rare Plants
- Karner Blue Butterfly & Wild Lupine





NHB PROJECTS & COLLABORATIONS

Ecological Integrity Assessment Method (EIA)

- An assessment of the structure, composition, processes, and connectivity of an ecosystem
 - How do these characteristics compare to a reference example?
 - What do they say about the occurrence of natural disturbance regimes?
- Developed in partnership with NatureServe and Natural Heritage programs in other states to create a consistent methodology

Applications for Land Management

- Monitoring ecosystem condition to inform management actions
- Prioritizing sites for conservation or restoration

EIA Methodology

3 Step Approach

PRE-FIELD
ASSESSMENT

Remote
sensing (GIS)

FIELD
ASSESSMENT

Observations

POST-FIELD
ASSESSMENT

QC, Analysis
and Scoring



EPA Wetland Program Development Grant

Expanding Wetland Monitoring and Assessment Capabilities to Inform Environmental Reviews, Mitigation, and Conservation

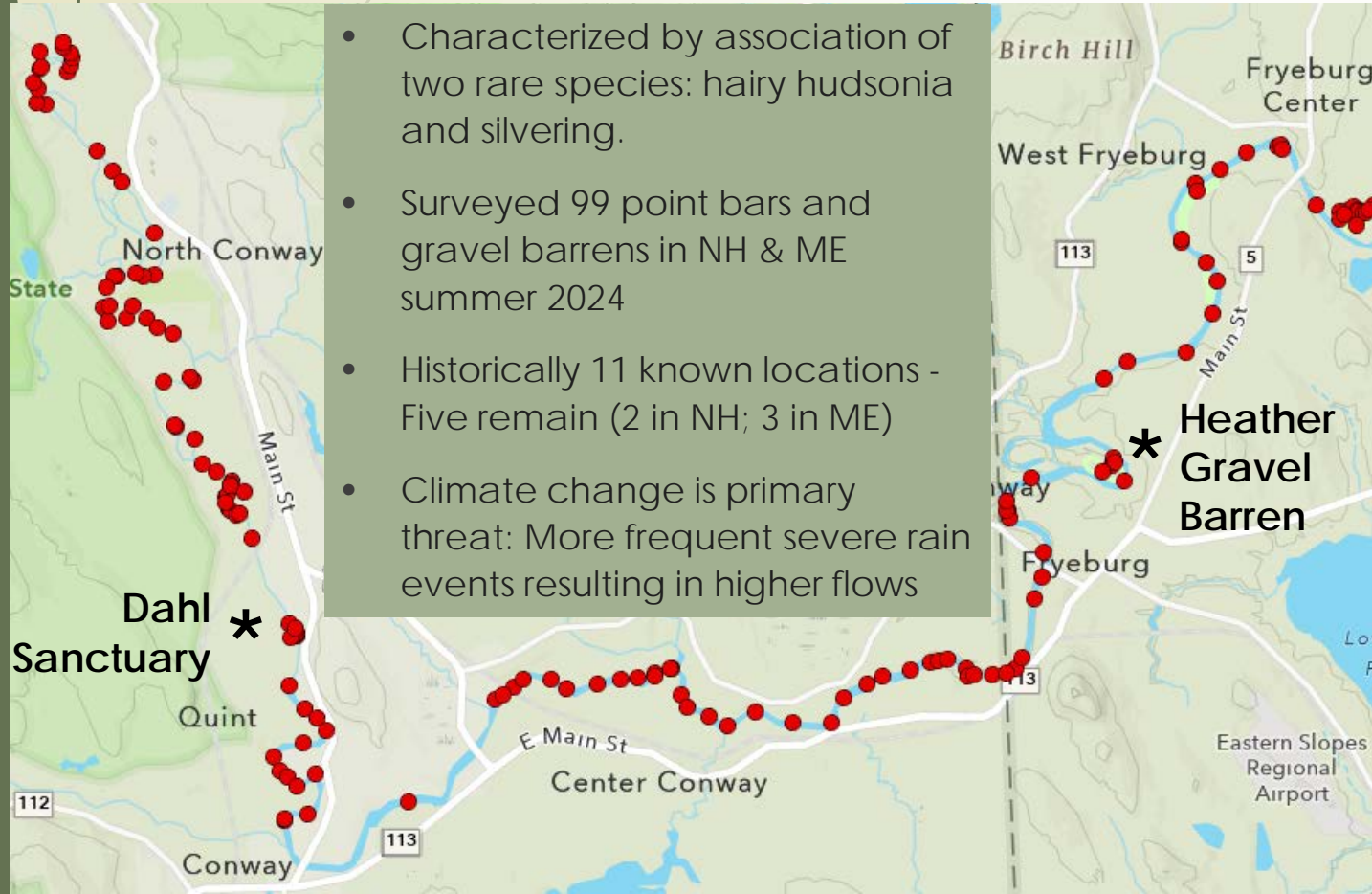
Goal: develop and test a Rapid Floristic Quality Assessment (FQA) Method ...
...while prioritizing wetland surveys within watersheds that support public drinking water supplies for underserved communities.

- FQA: standardized method of rapidly assessing the condition of a vegetated area based on the plant species that are present.
- Focused work on underserved census tracts as identified by the Climate & Environmental Justice Screening Tool (CEJST)
- Identify wetlands of high ecological value that support drinking water supplies
- Share results with state and local and stakeholders to:
 - Enhance awareness of the condition and connectivity of critical wetlands to the drinking water sources of underserved communities
 - Enable protection of wetlands of high ecological value

Surveying a globally rare natural community

- Hudsonia - silverling riparian barren (S1,G1)
- Known **only** along 40 km of Saco River in NH, ME

- Characterized by association of two rare species: hairy hudsonia and silverling.
- Surveyed 99 point bars and gravel barrens in NH & ME summer 2024
- Historically 11 known locations - Five remain (2 in NH; 3 in ME)
- Climate change is primary threat: More frequent severe rain events resulting in higher flows



Heather Gravel Barren, Fryeburg ME; open floodplain variant.



Dahl Sanctuary, Conway, NH; river channel variant

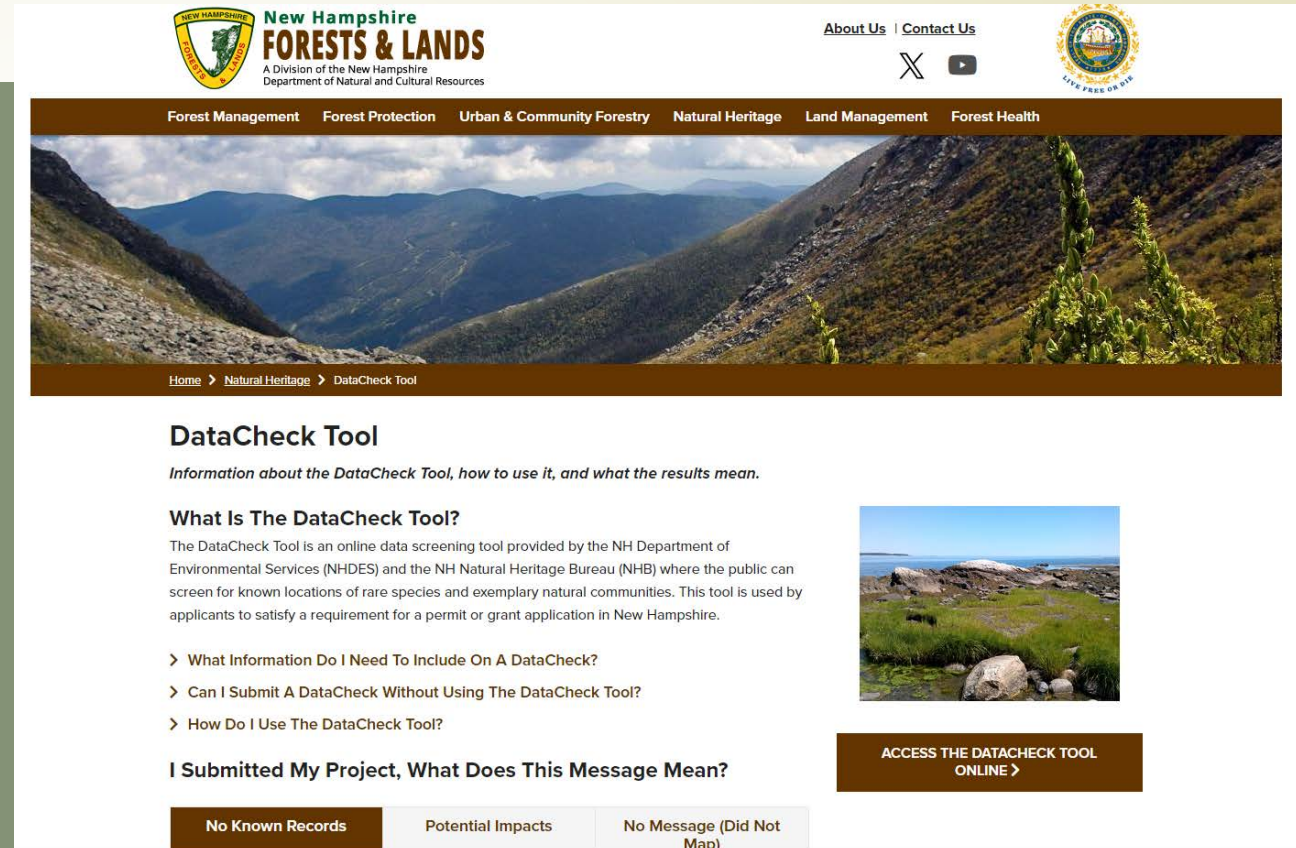




NHB DATACHECK TOOL

NHB DataCheck Tool

- ▶ Requirement of certain permit and grant applications
- ▶ Screen for potential impacts to T&E Plants, Exemplary Natural Communities, and Wildlife
- ▶ Using the DataCheck Tool - video clip
- ▶ On our website:
 - ▶ Link to the DataCheck Tool
 - ▶ Link to the instructional video
 - ▶ Information about Environmental Review
 - ▶ [DataCheck Tool | NH Division of Forests and Lands](#)



The screenshot shows the New Hampshire Forests & Lands website. The header includes the New Hampshire state seal, the text "New Hampshire FORESTS & LANDS", and "A Division of the New Hampshire Department of Natural and Cultural Resources". Navigation links include "About Us | Contact Us", "X", and a YouTube icon. A secondary navigation bar lists "Forest Management", "Forest Protection", "Urban & Community Forestry", "Natural Heritage", "Land Management", and "Forest Health". The main content area features a large landscape image of mountains. Below the image is a breadcrumb trail: "Home > Natural Heritage > DataCheck Tool". The section title is "DataCheck Tool" with a subtitle "Information about the DataCheck Tool, how to use it, and what the results mean." The text explains that the tool is an online data screening tool provided by the NH Department of Environmental Services (NHDES) and the NH Natural Heritage Bureau (NHB) for screening potential impacts on rare species and exemplary natural communities. A list of questions is provided: "What Information Do I Need To Include On A DataCheck?", "Can I Submit A DataCheck Without Using The DataCheck Tool?", and "How Do I Use The DataCheck Tool?". Below this is the heading "I Submitted My Project, What Does This Message Mean?" and three buttons: "No Known Records" (highlighted), "Potential Impacts", and "No Message (Did Not Map)". To the right, there is a small image of a rocky landscape and a button that says "ACCESS THE DATACHECK TOOL ONLINE >".



LANDOWNER REQUESTS

Landowner Requests

- What is a Landowner Request?
 - Map of the property
 - NHB Records on the property
 - List of records within 1 mile
 - **Must have landowner permission to submit a request!**
- What is it for?
 - Information
 - Conservation Planning
 - Forest Management Planning
 - **Not for permitting or other regulatory requirements**

Landowner Requests



New Hampshire Natural Heritage Bureau

DNCR - Division of Forests & Lands
 172 Pembroke Road, Concord, NH 03301
 Phone: (603) 271-2214 Fax: (603) 271-6488

To: Requestor Name
 Conservation Commission
 Forest Road
 Your Town, NH 03333

From: NH Natural Heritage Bureau
 Date: 2024-10-30

Re: Review by NH Natural Heritage Bureau of request dated 2024-10-23

NHB File ID: 4444

Town: Your Town, NH

Project type: Landowner Request

Location: Tax Map 3, Lot 72

We have searched our database for records of rare species and exemplary natural communities on the property(s) identified in your request. Our database includes known records for species officially listed as Threatened or Endangered by either the state of New Hampshire or the federal government, as well as species and natural communities judged by experts to be at risk in New Hampshire but not yet formally listed.

NHB records on the property(s): None

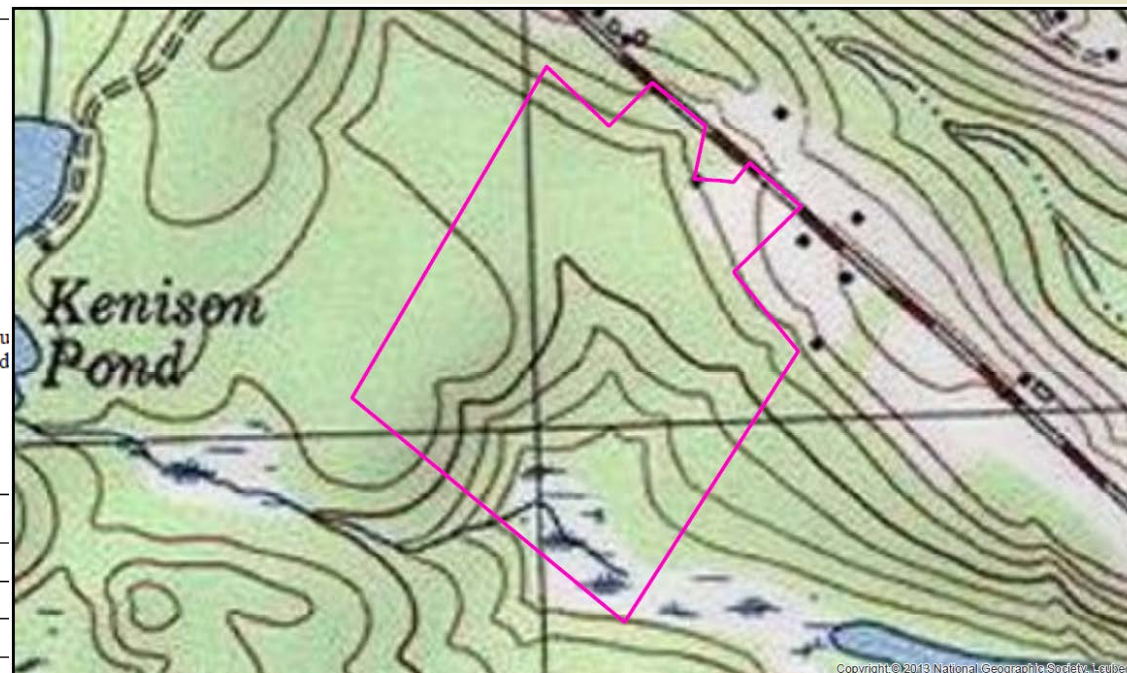
NHB records within one mile of the property(s):

	Last Reported	Listing Status		Conservation Rank	
		Federal	NH	Global	State
Plant Species					
climbing hempvine - <i>Mikania scandens</i>	2021	--	E	G5	S1
Vertebrate Species					
American Eel - <i>Anguilla rostrata</i>	2009	--	SC	G4	S3
Blanding's Turtle - <i>Emydoidea blandingii</i>	2019	--	E	G4	S1
Northern Black Racer - <i>Coluber constrictor constrictor</i>	2021	--	T	T5	S2

Listing codes: T = Threatened, E = Endangered, SC = Special Concern

Rank prefix: G = Global, S = State, T = Global or state rank for a sub-species or variety (taxon)

Rank suffix: 1-5 = Most (1) to least (5) imperiled. "--", U, NR = Not ranked, B = Breeding population, N = Non-breeding, H = Historical, X = Extirpated.



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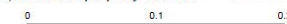
Natural Heritage Bureau Landowner Report

Project ID Number: 4444

	Property Bounds	# of Records
Plant Occurrence:	0	0
Animal Occurrence:	0	0
Natural Community:	0	0
Ecological System:	0	0



NOTE: Any rare species and/or exemplary natural communities in this area are not shown unless they occur, at least in part, within the property bounds.



A negative result (no record in our database) does not mean that no rare species are present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

NOTE: This review cannot be used to satisfy a permit or other regulatory requirement to check for rare species or habitats that could be affected by a proposed project, since it provides detailed information only for records actually on the property.

Landowner Requests

- What's next?
 - Go Botany
 - NH Fish & Game
 - NatureServe Explorer
 - Call us!

Reptiles and Amphibians of New Hampshire

Information on New Hampshire Reptiles and Amphibians



Snakes of New Hampshire >



Salamanders of New Hampshire >



Turtles of New Hampshire >



Frogs of New Hampshire >

Native Plant Trust GO BOTANY

Discover thousands of New England plants

- Home
- Simple Key
- PlantShare
- Full Key
- Dichotomous Key
- Teaching
- Help

You are here: [Simple Key](#) > [All other flowering non-woody plants](#) >

[Daisies, goldenrods, and other aster family plants](#) > [Mikania scandens](#)

Mikania scandens — climbing hempvine



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Facts

Climbing hempvine inhabits riparian and lakeside forests and thickets in eastern North America. In the northern part of New England it is confined to the coastal plain. The Seminole Indians used this plant to treat skin conditions resulting in itching.

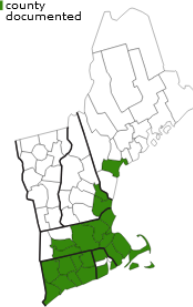
Habitat

Floodplain (river or stream floodplains), forests, shrublands or thickets

New England distribution

Adapted from [BONAP](#) data

Native
■ county documented



[about the labels on this map](#)

Found this plant? Take a photo and [post a sighting](#).

North America distribution

Adapted from [BONAP](#) data



[enlarge](#)



- Search
- About the Data
- About Us
- Help
- Explorer Pro
- Adopt a Species

English

Anguilla rostrata

American Eel

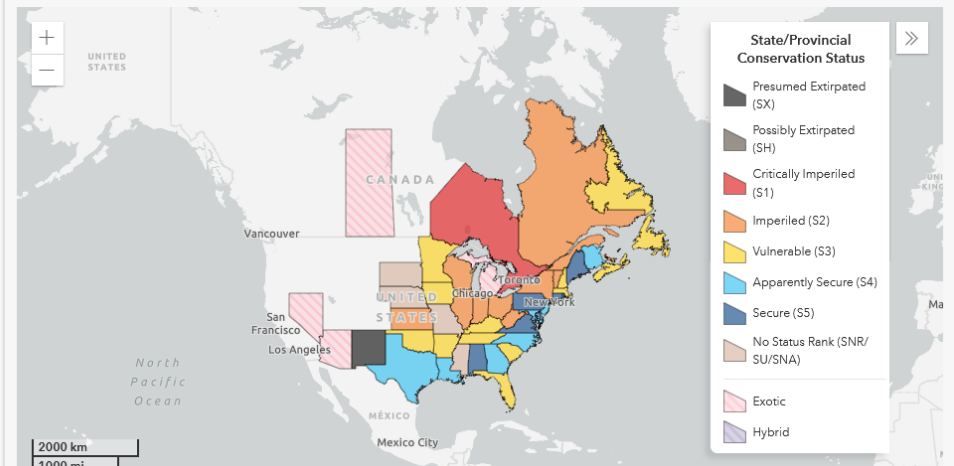


[New Search](#)

State/Provincial Conservation Status

Documented Distribution

[View on Explorer Pro](#)





DATA SHARING AGREEMENTS

Data Sharing Agreements

- What is a Data Sharing Agreement?
 - A signed agreement that grants a specific user access to some of NHB's data for a specific purpose for one year (typically)
 - Confidential data
 - Conditions regarding how the data can and cannot be used
 - For research, conservation & land use planning: Towns, NGOs, agencies
- What kinds of data are available?
 - List of species
 - Geographic Information System [GIS] shapefiles
 - Table/spreadsheet data
 - **Level of detail available depends on project, size of area requested, use of data, landowner permission, etc.**

Data Sharing Agreements

- Full Details
 - Available when landowner has provided permission
 - Best for specific properties, Town-owned properties
- Precise Location, Taxonomic Group Provided
 - Available for Town-wide requests or larger
 - Best for identifying/protecting specific locations of ENC's, rare plants
- Obscured Location, Species/Natural Community Name Provided
 - Available for Town-wide requests or larger
 - Best for general planning, identifying biodiversity hotspots

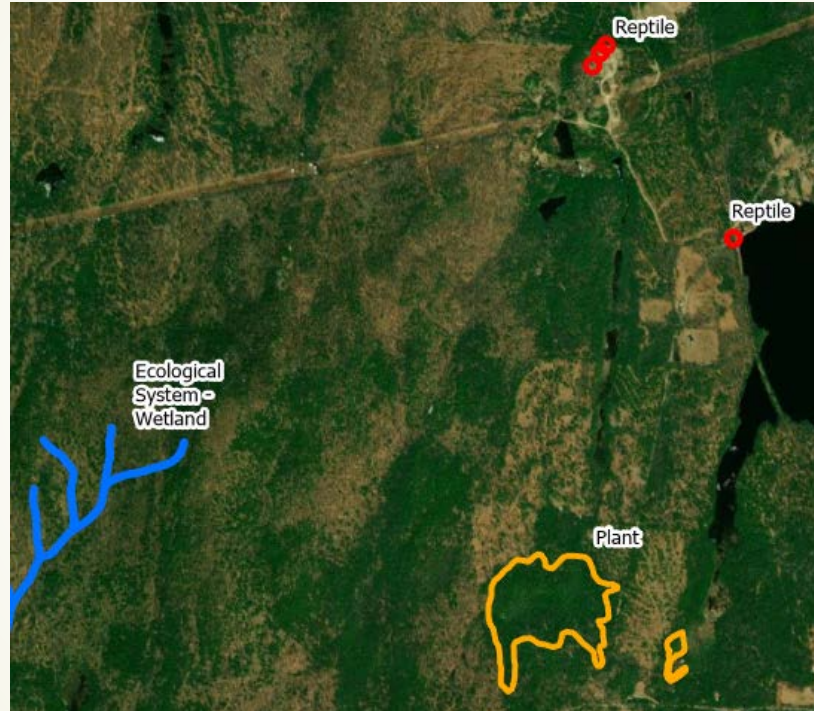
Data Sharing Agreements

Full Details



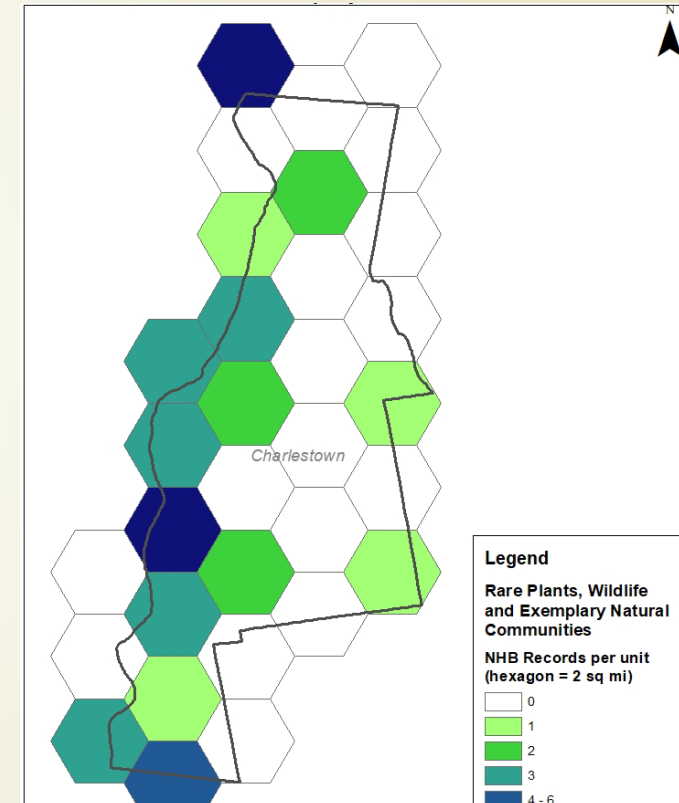
SComName	SurveySite	Year	SurveyDate	EOData
Cobblestone Tiger Beetle	Pemigewasset River	2024	2024-08-07	2024: Area 14284: 5-6 adults observed. 2019: Area 14579: Adult pair observed mating. 8 adults observed, sex unknown. 2018: Area 15107: 2 adults observed. Area 15108: 1 adult observed, sex unknown. Area 15109: 8 adults observed, sex unknown. 2017: Area 14282: Between 6 and 25 adults observed, sex unknown. Area 14283: 1-3 adults observed, sex unknown. Area 14284: 2-4 adults observed, sex unknown.

Precise Location, Taxonomic Group Provided



TAXGRP	LIST_US	LIST_NH	SEOTRACK
Reptile	--	T	Y
Ecological System - Wetland	--	--	Y
Plant	--	T	Y
Reptile	--	SC	Y

Obscured Location, Species/Natural Community Name Provided



SNAME	SCOMNAME	SEOTRACK	LIST_US	LIST_NH
Glyptemys insculpta	Wood Turtle	Y	--	SC
Sturnella magna	Eastern Meadowlark	Y	--	T
Heteranthera dubia	grass-leaved mud-plantain	Y	--	T
Potamogeton nodosus	long-leaved pondweed	Y	--	T
Potamogeton zosteriformis	flat-stem pondweed	Y	--	E
Rich mesic forest		Y	--	--
Lithobates pipiens	Northern Leopard Frog	Y	--	SC
Petromyzon marinus	Sea Lamprey	Y	--	SC



PROTECTING NH'S BIODIVERSITY

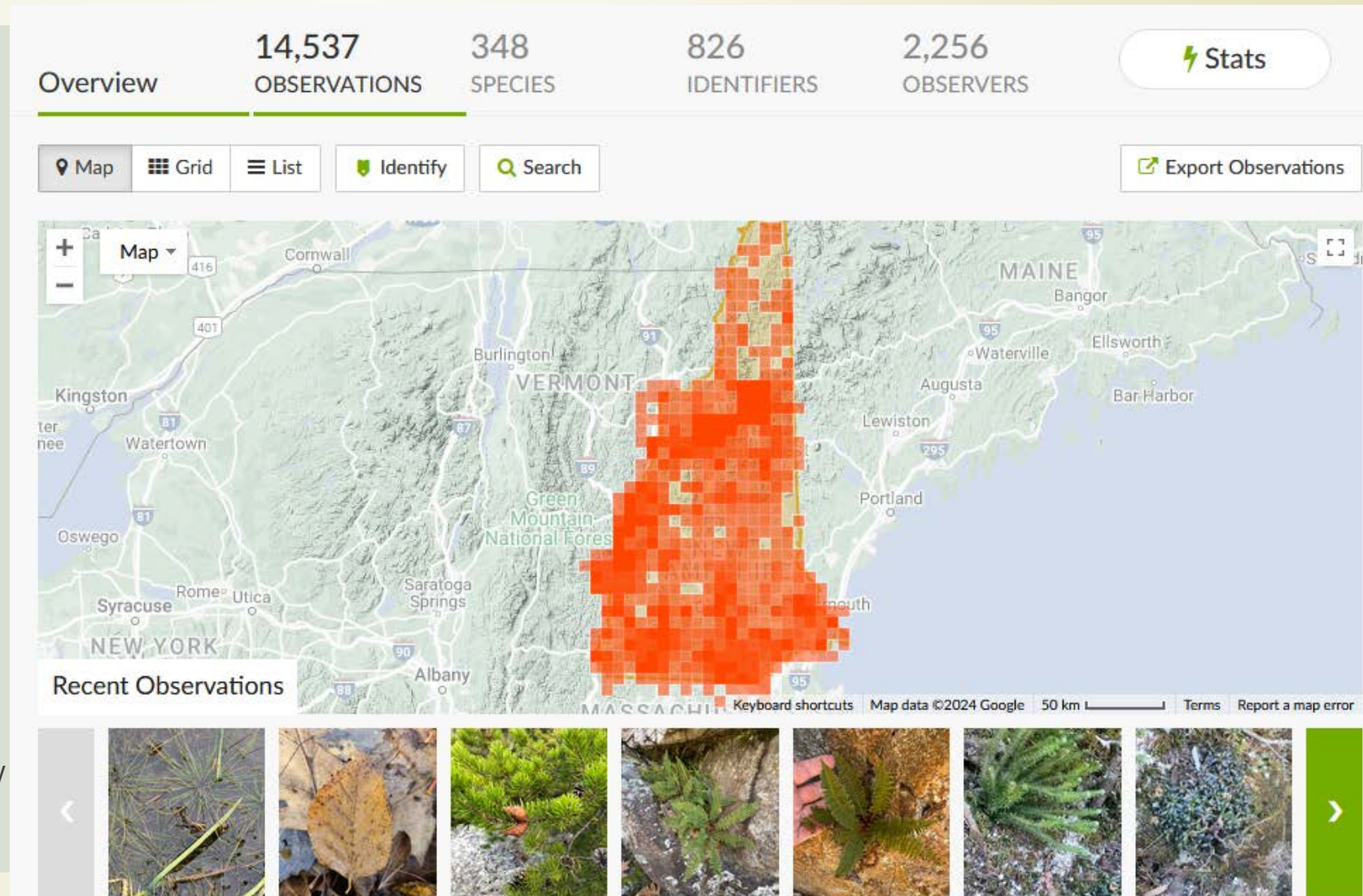
What you can do!

How to help protect NH's biodiversity with NHB

- Identify important resources (*Landowner request, DSA, DataCheck*)
- Learn more about natural communities and species in your area
 - <https://gobotany.nativeplanttrust.org/> - **Go Botany**
 - <https://explorer.natureserve.org/> - **NatureServe Explorer**
- Report rare species occurrences to NHB!
 - Form - <https://www.nhdf.dncr.nh.gov/natural-heritage/rare-native-plants>
 - **Join our iNaturalist project**
- Become a **Plant Conservation Volunteer**
- Reach out to us!
 - Questions about management, rare species, and native plantings
 - Surveys, Ecological Integrity Assessments (if funding)

NHB's iNaturalist Rare Plant Project

- Our aim for this project is to improve our database by searching iNaturalist for rare plant species locations that are currently unknown to NHB staff. (T & E, Watch List, Indeterminate)
- Plants are only added to our database with landowner permission, and locations are kept confidential from the general public, but are utilized for environmental review and conservation planning purposes.
- The information we collect will help us develop and implement measures for the protection, conservation, enhancement, and management of native New Hampshire plants.

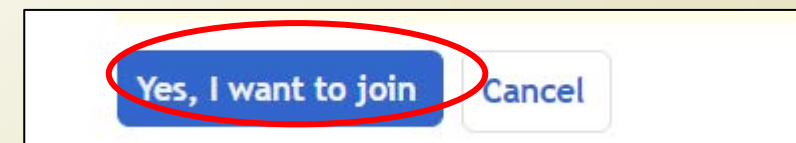
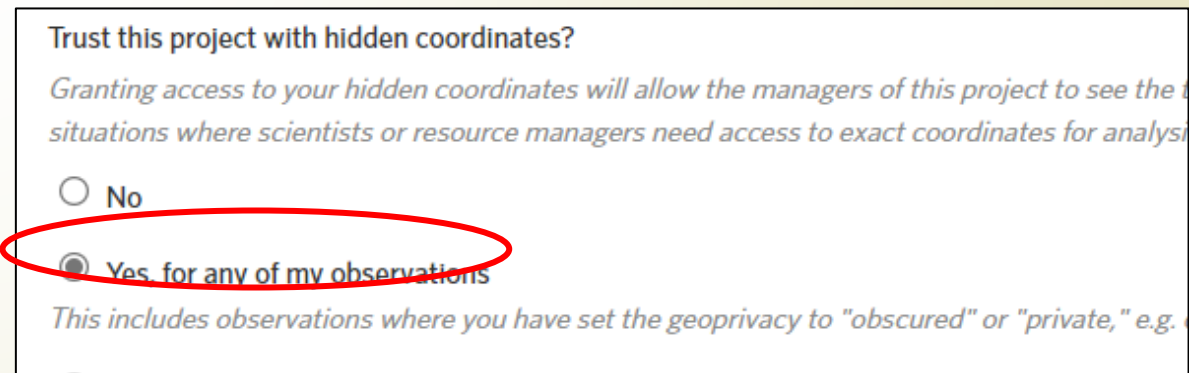
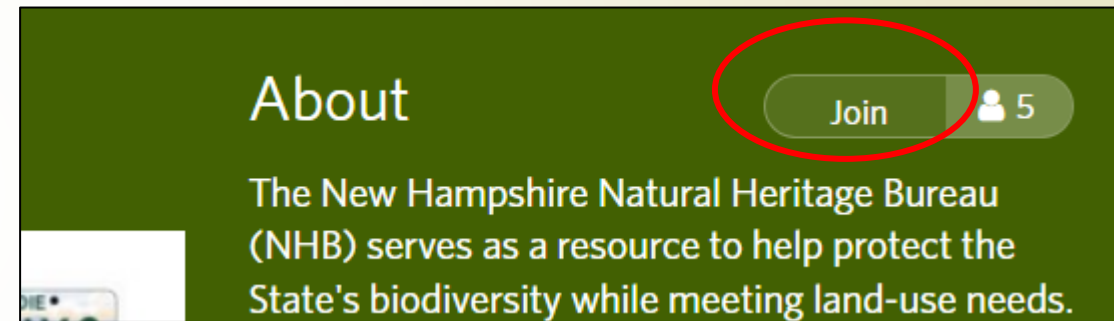
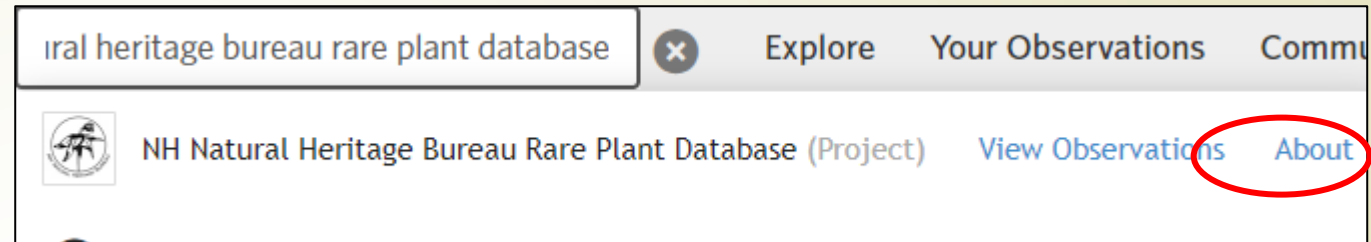


How to Join NHB's iNaturalist Rare Plant Project

- In the search bar in the top left corner of the page, search "nh natural heritage bureau rare plant database"
- When the project shows up, click next to the project name where it says "about" in blue
- Once on the project page, click join in the top right corner
- Scroll down to the bottom of the join page where you will find options for trust. Select the option that says "yes for any of my observations"
- Click "Yes I want to join"

* Note this needs to be done on the computer, if you do it on your phone you cannot choose if you trust the project with coordinates.

madeline.p.severance@dncr.nh.gov



Become a Plant Conservation Volunteer

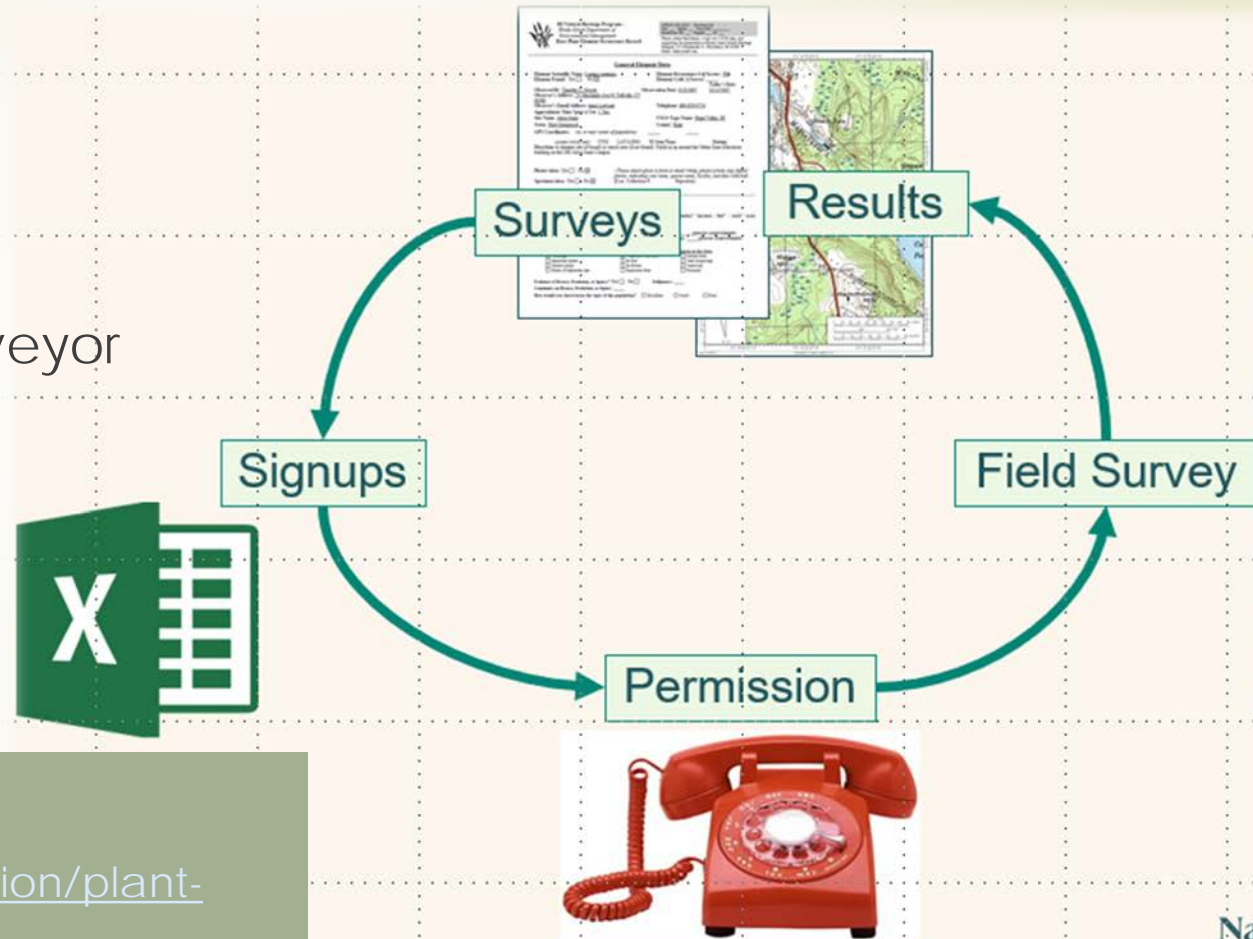
- Collaboration between Native Plant Trust and Natural Heritage Programs in each state
- Mission: to engage interested people in activities that promote the conservation of New England's native flora and habitats with an emphasis on rare species protection.
 - Rare plant monitoring
 - Habitat management
 - Invasive species management



Native Plant Trust

Become a Plant Conservation Volunteer

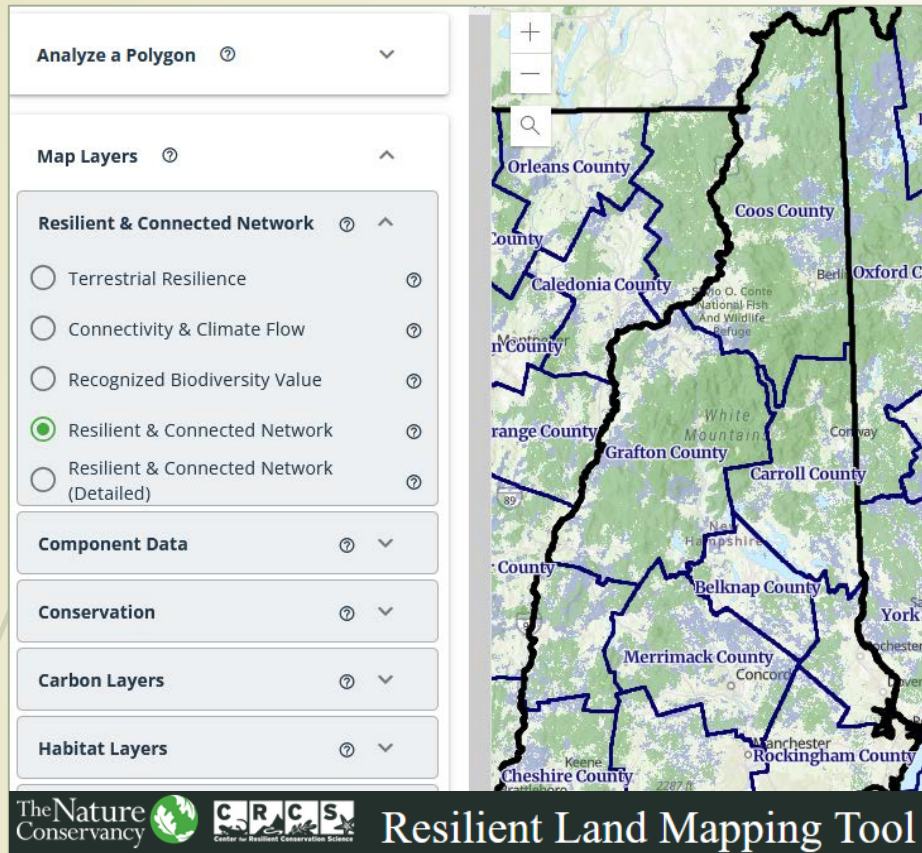
- Sign up
- Attend a training
- Explore survey options
- Receive email from lead surveyor
- Head into the field!
- Learn from the experts



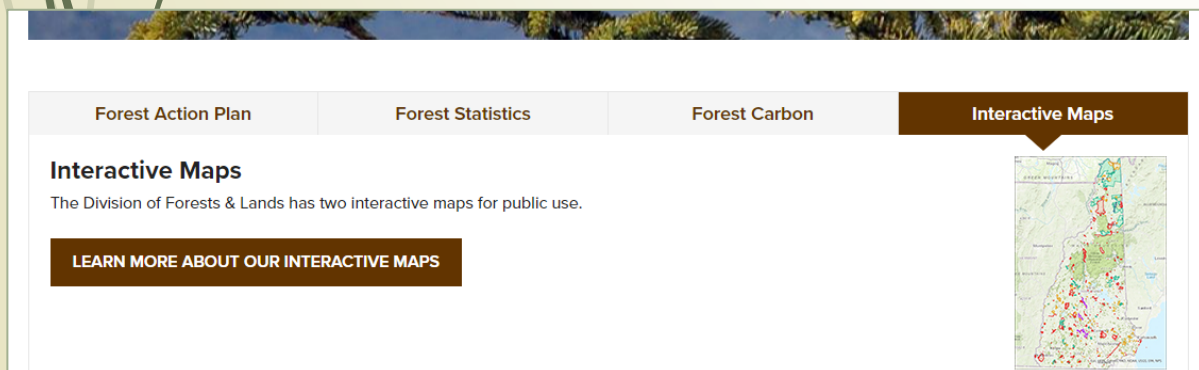
Learn more and sign up:

- <https://www.nativeplanttrust.org/conservation/plant-conservation-volunteer-program/>
- Email Maria Kennedy, Community Science Coordinator: mkennedy@nativeplanttrust.org

Other ways you can protect NH's biodiversity



- Complete an NRI (Natural Resource Inventory)
- Conserve exemplary natural communities and/or rare species
- Manage invasive species
- Build in buffers around important natural resources
- Create corridors and blocks of protected areas
- Use existing resources to plan conservation areas in your town:
 - TNC's **Resilient Land Mapping Tool** – explore climate-resilient sites designed to sustain biodiversity and ecological functions into the future under a changing climate - <https://www.maps.tnc.org/resilientland/#/explore>
 - **WAP** – habitat land cover map, habitat-species crosswalk, highest ranked habitats
 - **NH Ecosystem Services Map** – Or scroll down to “Interactive Maps” @ <https://www.nhdfi.dncr.nh.gov/> water, biodiversity, habitat, and connectivity
- Get a Moose Plate or apply for a grant - <https://www.mooseplate.com/>
- Apply for an **Aquatic Resources Mitigation (ARM) Fund** grant for restoration and enhancement projects



THANK YOU!

Amy Lamb

603-271-2823

amy.e.lamb@dncr.nh.gov

<https://www.nhdfi.dncr.nh.gov>

DataCheck Tool

Landowner Requests

Data Sharing Agreements

iNaturalist Project

Plant Conservation Volunteers

Moose Plate Program

Surveys / EIA

General Inquiries