

Acknowledgements

This work would not have been possible without the support of Amy Lamb and William Nichols of NHB who were instrumental with the inception of this project. I would also like to extend my appreciation and thanks to them for their guidance and assistance throughout the record review. I am grateful to Arthur Haines of the Native Plant Trust for allowing me to use his photos that are featured on this poster. Special thanks to Beth Wilkes of NHTI for her valuable and beneficial suggestions throughout this project. Finally, I would like to express my deepest gratitude to Tracey Lesser of NHTI for her guidance, recommendations, feedback, for always being there to answer a question no matter how big or small, and most especially for supporting me throughout the years as I pursued my degree.

Rare Plants of New Hampshire



Robinson's hawkweed
(*Hieracium robinsonii* (Zahn) Fern.)



lance-leaved arnica
(*Arnica lanceolata* Nutt. ssp. *lanceolata*)



ram's-head lady's-slipper
(*Cypripedium arietinum* Ait. f.)



wavy blue grass
(*Poa laxa* Haenke ssp. *fernaldiana* (Nannf.) N. Hylander.)

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How Many Rare Plants Are Protected?

3 Federally Rare + 331 State Endangered + 85 State Threatened = 419 TOTAL PROTECTED
(NH Division of Forests and Lands 2020)

Objective

Geographically locate rare plants utilizing outside records (Figures 1 and 2).



Identify records not in NHB state database (Figures 3 - 7).

Update NHB state database with new records (Figures 8 and 9).

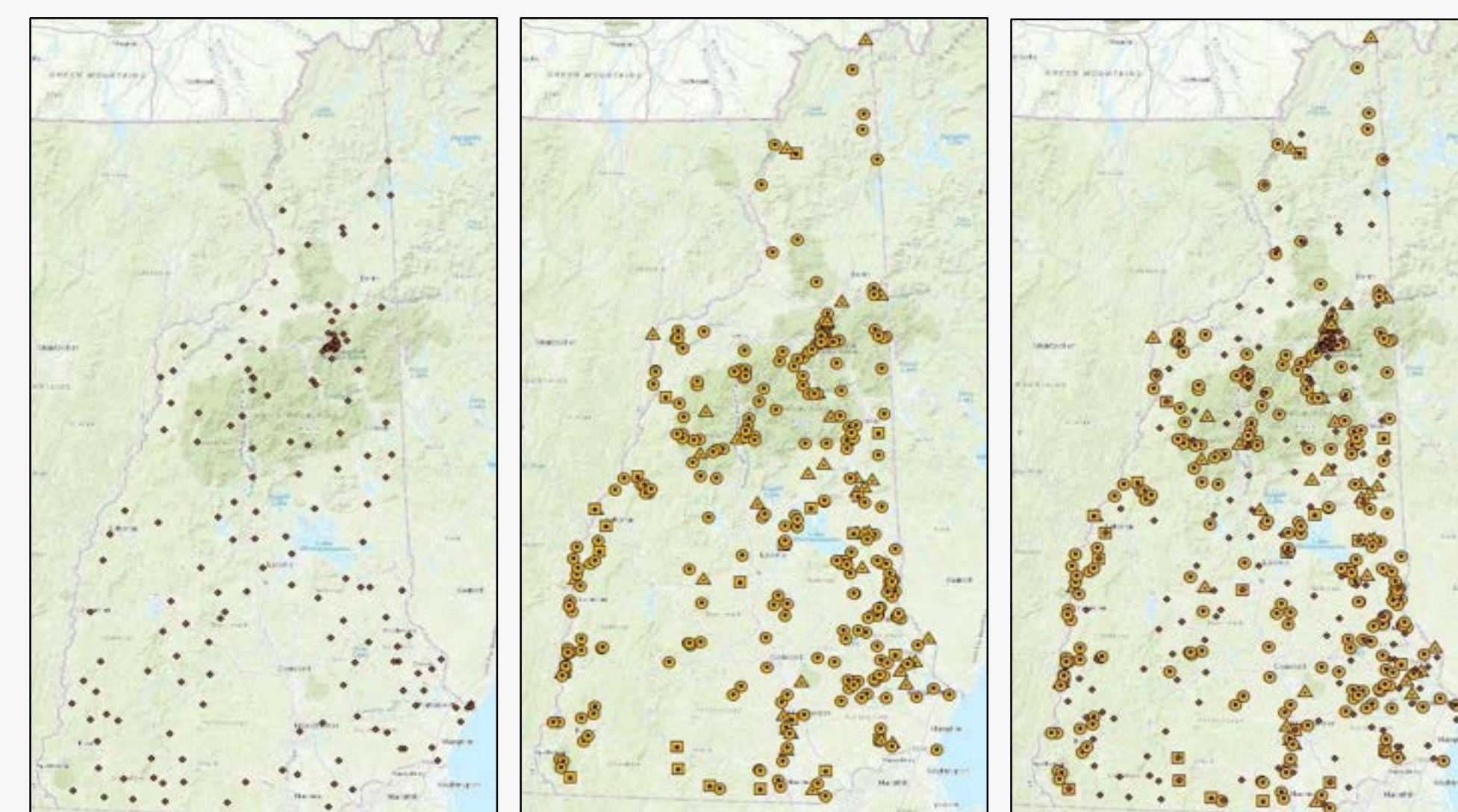
Inventory CNH Records

Figure 1. Download CNH Data.
(Herbarium specimen data sharing portal for CNH n.d.)

Inventory CNH Records

Figure 2. Remove Duplicates (Yellow & Blue).

Upload Data to ArcMap



CNH NHB Combined
Figure 3. Data points on NH maps.

Identify New/Duplicate Records

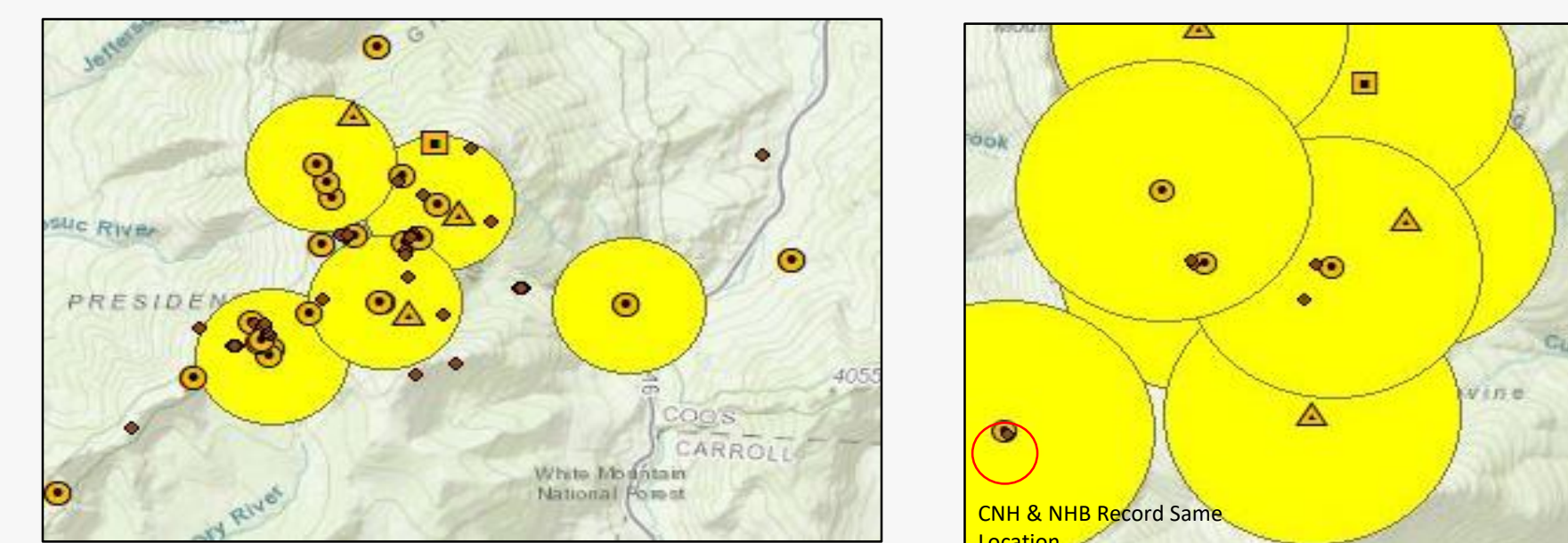


Figure 4. CNH & NHB data with 1 km NHB buffer. Potential sub-populations of species.

Results



Figure 5. Total CNH records found with final number of records researched.

Figure 6. Record review percentages.

The Results

Species	New Records	Duplicate Records
<i>Arnica lanceolata</i> Nutt. ssp. <i>lanceolata</i>	19	0
<i>Astragalus alpinus</i> L. var. <i>brunetianus</i> Fern.	11	0
<i>Carex polymorpha</i> Muhl.	1	1
<i>Chenopodium foggii</i> H.A. Wahl	6	0
* <i>Crataegus fluviatilis</i> Sarg.	7	0
* <i>Crataegus ideae</i> Sarg.	1	0
<i>Digitaria filiformis</i> (L.) Koel. var. <i>laevigulumis</i> (Fern.) Wipff	3	0
<i>Eleocharis diandra</i> C. Wright	5	2
<i>Geum peckii</i> Pursh	67	0
<i>Isotria medeoloides</i> (Pursh) Raf.	12	0
<i>Liatris novae-angliae</i> (Lunell) Shinners var. <i>novae-angliae</i>	21	5
<i>Nabalus boottii</i> DC	26	0
<i>Panax quinquefolius</i> L.	16	0
<i>Poa laxa</i> Haenke ssp. <i>fernaldiana</i> (Nannf.) N. Hylander	18	0
<i>Potamogeton gemmiparus</i> (J.W. Robbins) J.W. Robbins ex Morong	4	0
<i>Potentilla robbinsiana</i> Oakes ex Rydb.	13	0
<i>Pseudognaphalium micradenium</i> (Weatherby) Nesom	0	1
<i>Pycnanthemum tarrei</i> Benth.	1	0
* <i>Robinia viscosa</i> Vent. var. <i>viscosa</i>	21	0
* <i>Rubus aculiferus</i> Fern.	11	0
* <i>Rubus alter</i> Bailey	50	0
* <i>Rubus severus</i> Brainerd	82	0
<i>Sagittaria teres</i> S. Wats	1	0
<i>Scirpus longii</i> Fern.	1	0
* <i>Sium carsonii</i> Dur. ex Gray	133	0
<i>Solidago leiocarpa</i> DC.	72	0
* <i>Solidago simplex</i> Kunth. var. <i>racemosa</i> (Greene) Cronq.	12	0
* <i>Thermopsis mollis</i> (Michx.) M.A. Curtis ex Gray	2	0
* <i>Thermopsis villosa</i> (Walt.) Fern. & Schub.	2	0

Figure 7. Species and number of records not in NHB state database.

Analysis

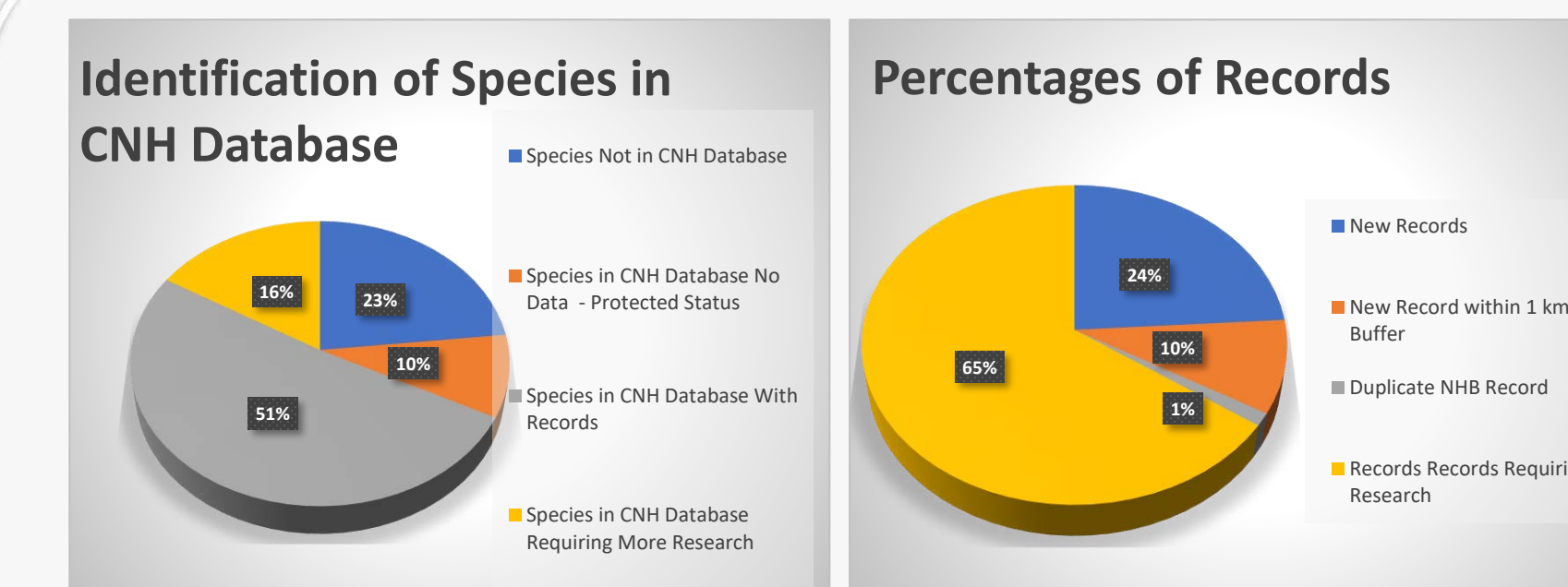


Figure 8. Adjusted results of species identified.

Figure 9. Adjusted percentages of records.

Why is Record Review Important?

- Conservation and protection of plant species is underrepresented globally and underfunded (Di Marco et al., 2017).
- Herbarium records used as a conservation tool afford an inexpensive way research and identify plant species.
- Identification of unknown locations of rare plants leads to protection.

Species Identified Using CNH Data

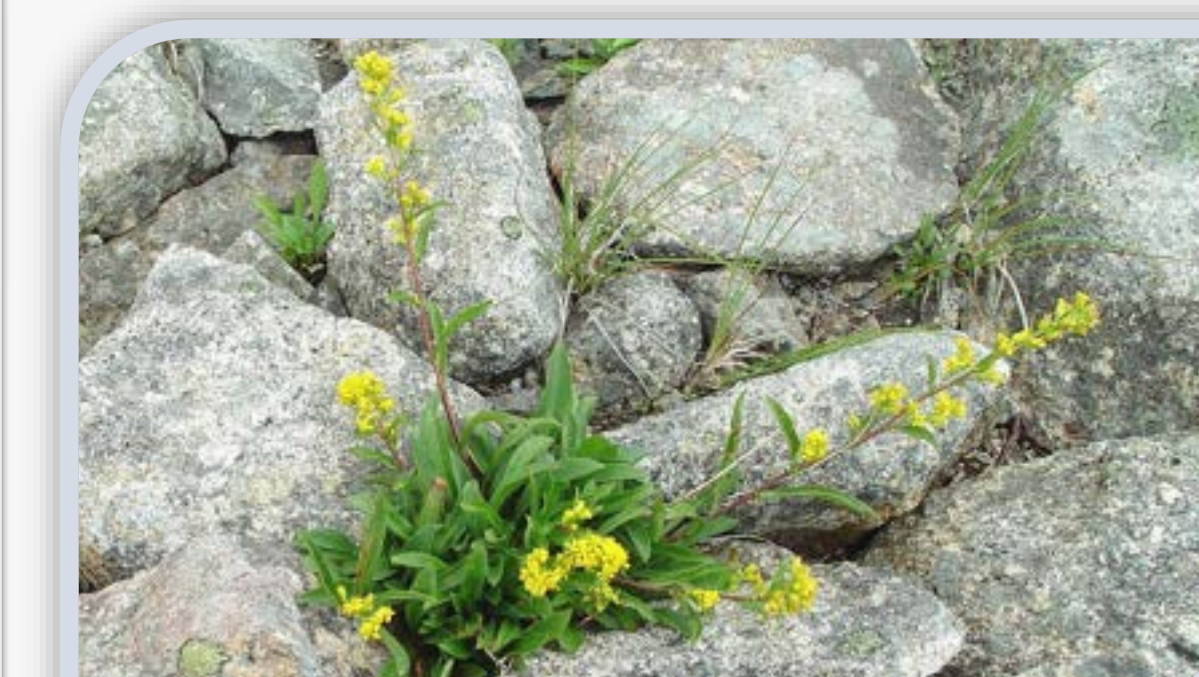
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river hawthorn
(*Crataegus fluviatilis* Sarg.)



Ide's hawthorn
(*Crataegus ideae* Sarg)
*Considered to be extinct in the State.



Rand's goldenrod
(*Solidago simplex* Kunth. var. *racemosa* (Greene) Cronq.)

Three rare plant species identified as not having records in the NHB state database.

Next Steps

- Results turned over to NHB for further analysis.
- Field verification by NHB for records found.
- Field identified species will be included in the NHB Database.
- Field verification could result in identification of additional species for inclusion in the NHB state database.