

Leveraging research and monitoring networks to inform management of the Chryxus Arctic butterfly in the globally rare Pine Barrens ecosystem

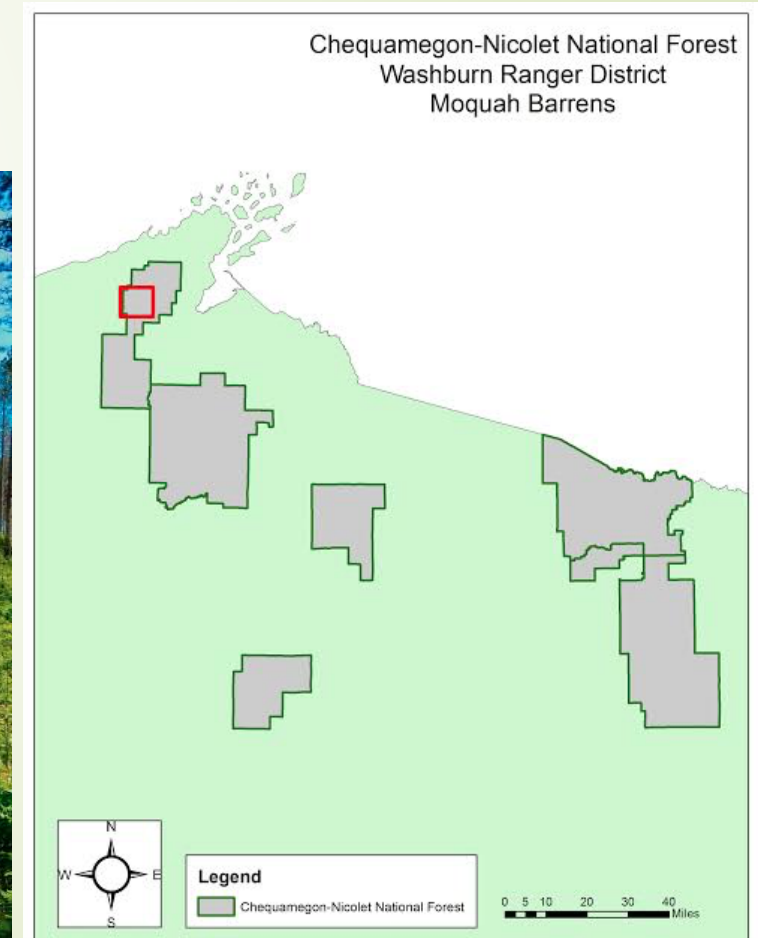
Or: How I learned to stop worrying and love studying butterflies

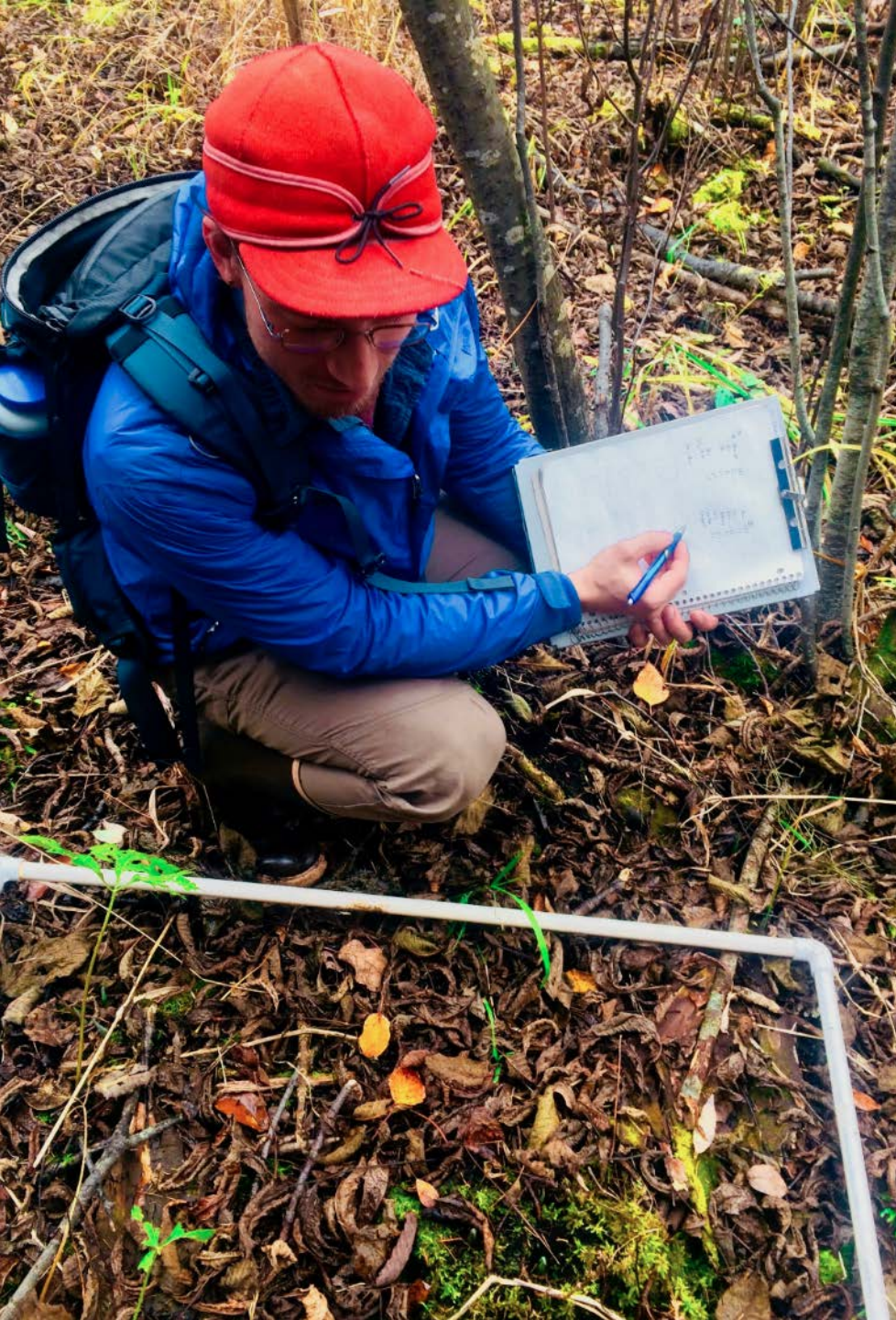
Presented by:
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Restoration Overview

► CNNF Pine Barrens





Research Summary

- ▶ Literature Review
- ▶ Emerging Inquiry
- ▶ Vegetation Survey

Fire and Butterfly Habitat



USFS

Swengel, *Biological Conservation* (1998)

Swengel & Swengel, *Biodiversity and Conservation* (2001)

Vogel et. al. *Ecology, Evolution and Organismal Biology* (2007)

Oeneis chryxus strigillosa

- Chryxus Arctic
- What we know:
- Identification
- Life History
- Range
- Habitat
- Presence in Northern WI

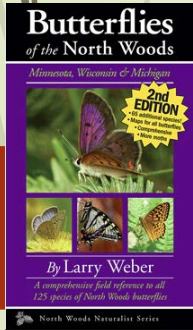


Photo Credit: Above:

<https://wisconsinbutterflies.org/butterfly/species/109-chryxus-arctic>

Belowt: http://www.wildutah.us/html/butterflies_moths/nymphalidae/h_b_oeneis_chryxus_altacordillera_specimen.html



Host Plants

- *Danthonia spicata*
(Poverty oat grass)
- *Piptatherum pungens*
(Mountain rice grass)
- *Carex pensylvanica*
(Pennsylvania sedge)



Ross, S. *Lepidoptera survey for chryxus arctic* (2009);
Scott *Papilio. New Series*; no. 14 (2006)

Photo Credit Clockwise from Left:

http://vaplantatlas.org/img/plants/originals/Danthonia_spicata%231482a%232_400.jpg

<https://extension.umaine.edu/blueberries/wp-content/uploads/sites/56/2013/03/Piptatherum-pungens-003.jpg>

http://www.wildutah.us/html/butterflies_moths/nymphalidae/h_b_oenis_chryxus_altacordillera_ova.html

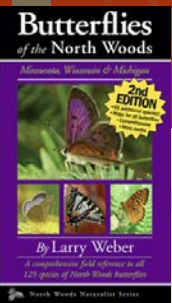
https://www.amerinursery.com/wp-content/uploads/2014/12/A10860_1_full.jpg

Nectar Sources

- *Vaccinium spp.*
(Blueberries)
- *Prunus spp.*
(Cherries)
- *Fragaria spp.*
(Strawberries)



Photo Credit: Left: <http://floreduquebec.ca/english/vaccinium-angustifolium>
Top: <http://www.theequinest.com/images/black-cherry-1.jpg>
Bottom: https://cdn.shopify.com/s/files/1/0108/5782/products/PL2000017268_card_lg.jpeg?v=1425499075



Knapton Behavioral
Ecology and
Sociobiology (1985)

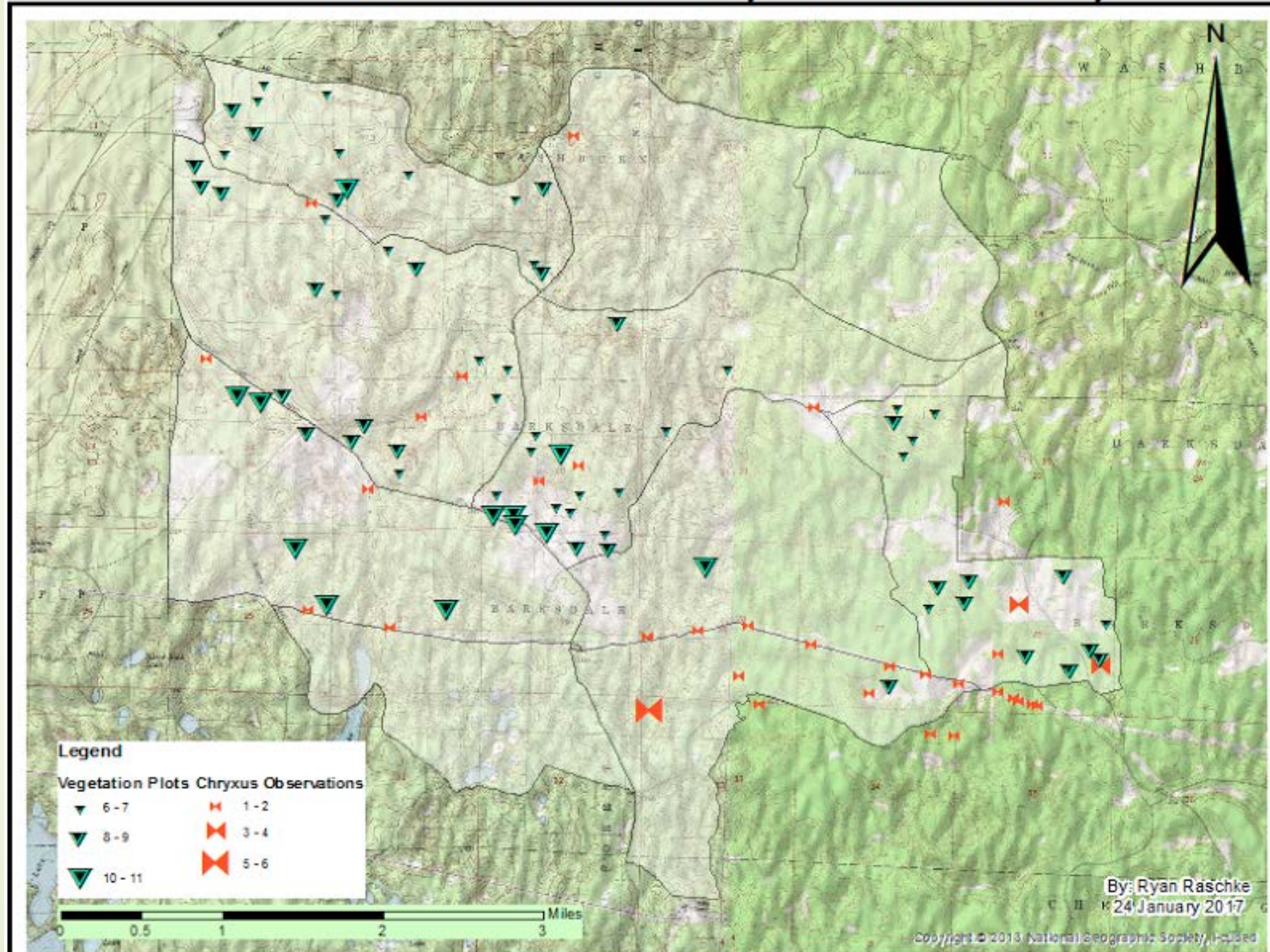


Vegetation Surveys

- Primary component of summer internship
- Used data to compose habitat index

Habitat Assessment

- Chryxus locations scaled by abundance
- Research plots scaled by number of nectar and host plant species





Known Unknowns

1. Gaps in Literature
2. Limited study in Great Lakes Region
3. Habitat preferences: vegetation composition

Recommendations

- Expand butterfly surveys
- Establish observation blinds to study behavior
- Conduct mark/recapture surveys
- Use larva enclosures to monitor lifecycle



Acknowledgements

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Questions?

