



Searching for Sensitive Joint-vetch: A Species in Decline

Misty Buchanan, Natural Areas Inventory Manager
NC Natural Heritage Program

Identify Track
Ballroom C
3:15 - 3:45pm

Searching for Sensitive Joint-vetch

A Species In Decline

NORTH CAROLINA
**Natural
Heritage
Program**



SCIENCE GUIDING CONSERVATION



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www.ncnhp.org

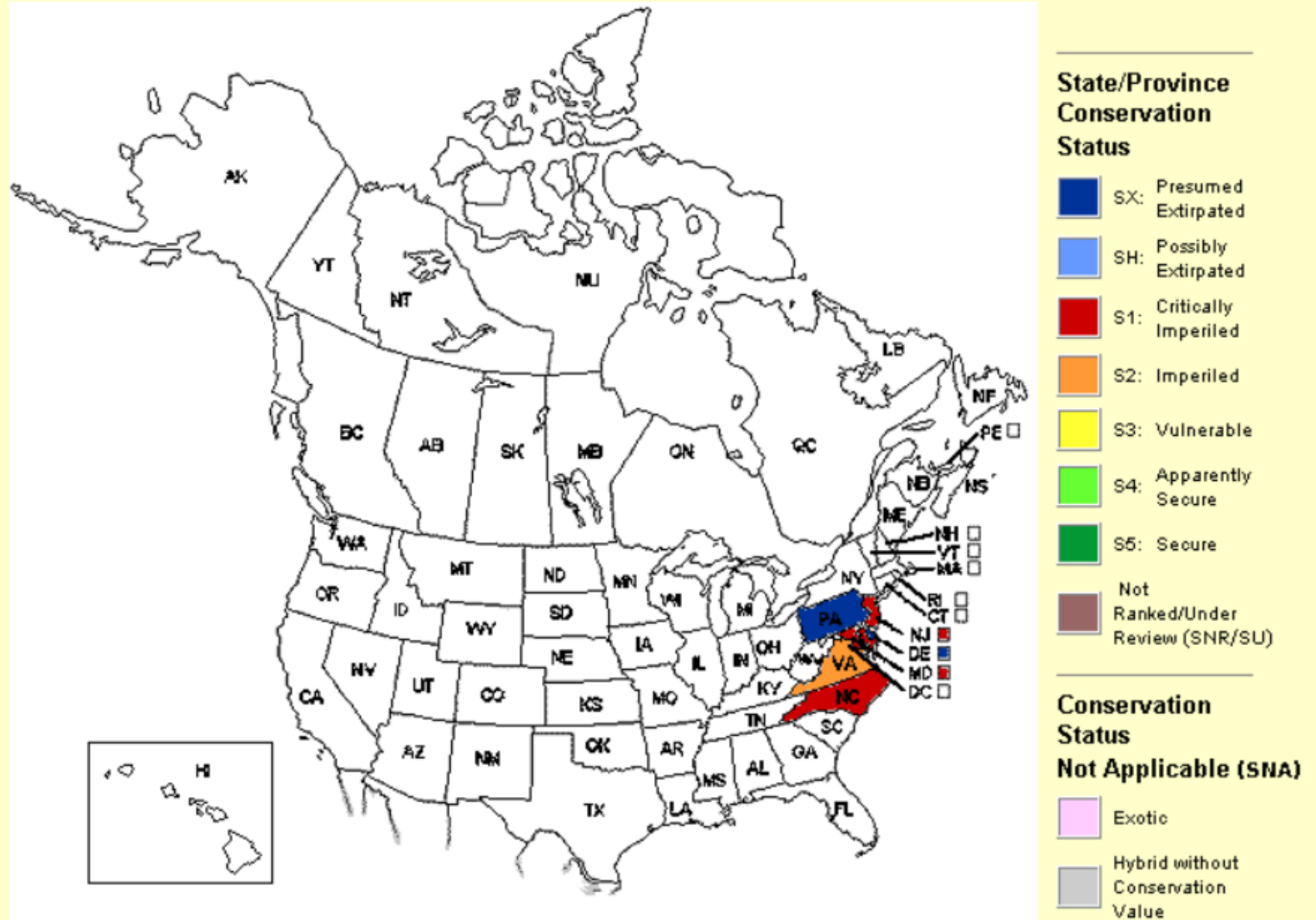
Sensitive Joint vetch (*Aeschynomene virginica*)

- Globally Imperiled (G2)
- Threatened (USFWS and NC PCP)



Global Range: Current range includes New Jersey, Maryland, Virginia, North Carolina. Extirpated from Pennsylvania and Delaware.

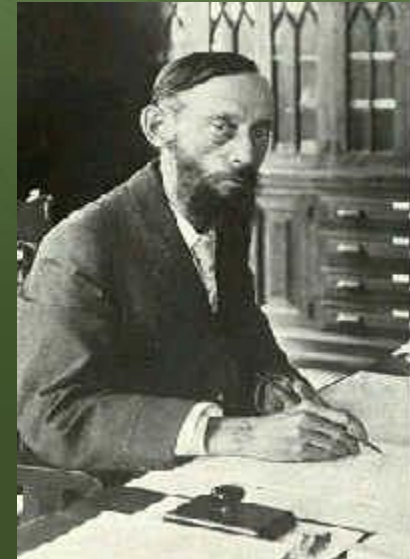
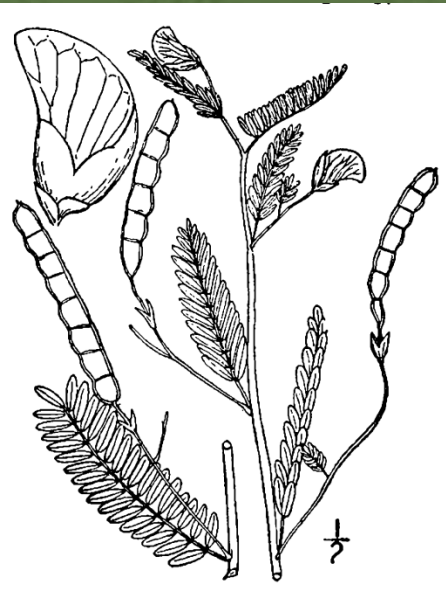
U.S. States and Canadian Provinces





Sensitive Joint-vetch history

- Published as *Hedysarum virginicum* in 1790 by Linnaeus
 - Described from specimens
 - "Habitat in Virginia."
- Recognized as *Aeschynomene virginica* 1888 by N.L. Britton, E. E. Sterns, J.F. Pogenburg I.
 - Catalog of plants within 100 miles of NY
 - Current northernmost population just over 100 miles from NYC
- Listed as Threatened (USFWS) in 1992



Nathaniel Lord Britton

. . . Not to be confused with Indian Joint-vetch (*Aeschynomene indica*)



Sensitive Joint-vetch

- Similar, related species
- Misidentified specimens
 - Erroneously reported as Sensitive Joint-vetch



Indian Joint-vetch

Real world - plants

- Folded Leaves
- Flowers faded or gone
- Worm-eaten fruits



Real world - habitat

- Wet ditch
- Competition suppressed by herbicide and hydrology



Recent history

- 2006: 1 population in NC; also some patches of Indian Joint-vetch
- 2007: 0 populations in NC, despite searches of all locations seen since 1990 ; some patches of Indian Joint-vetch
- 2011: Tyndall, R. Wayne. 2011. Long-term monitoring of two subpopulations of the federally threatened *Aeschynomene virginica* (Sensitive Joint-vetch) in Maryland. *Castanea* 76(1): 20-27.
- 2012: All populations in NC were considered historical or extirpated
 - Some populations “disappear”, then reappear in same location after years of absence (seed bank?)

2012 Surveys in MD and VA

- NC NHP
- VA NHP
- MD NHP
- USFWS

Surveyed healthy populations

VA: Cumberland Marsh, Mattaponi River

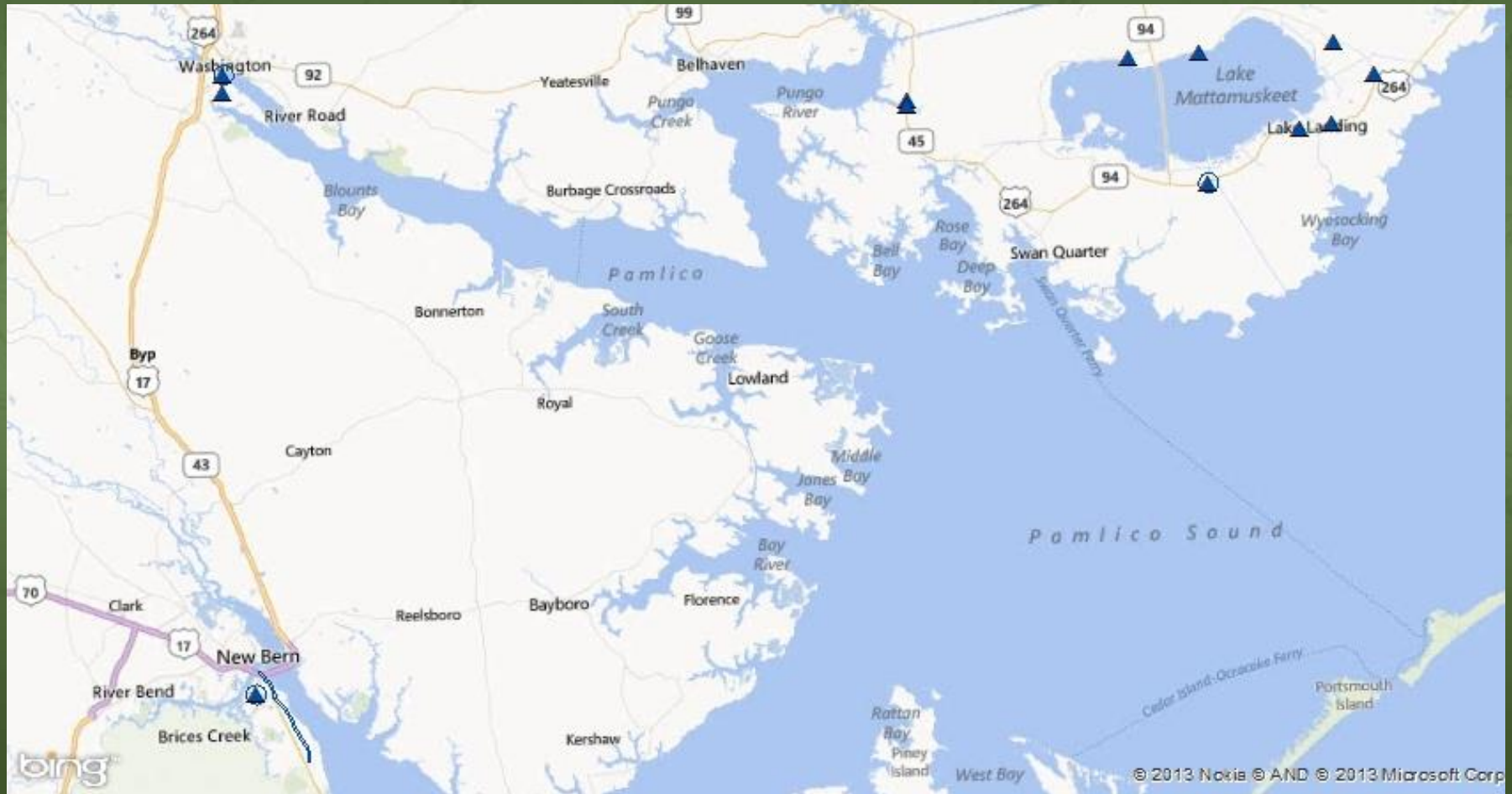
MD: Princess Ann Marshes



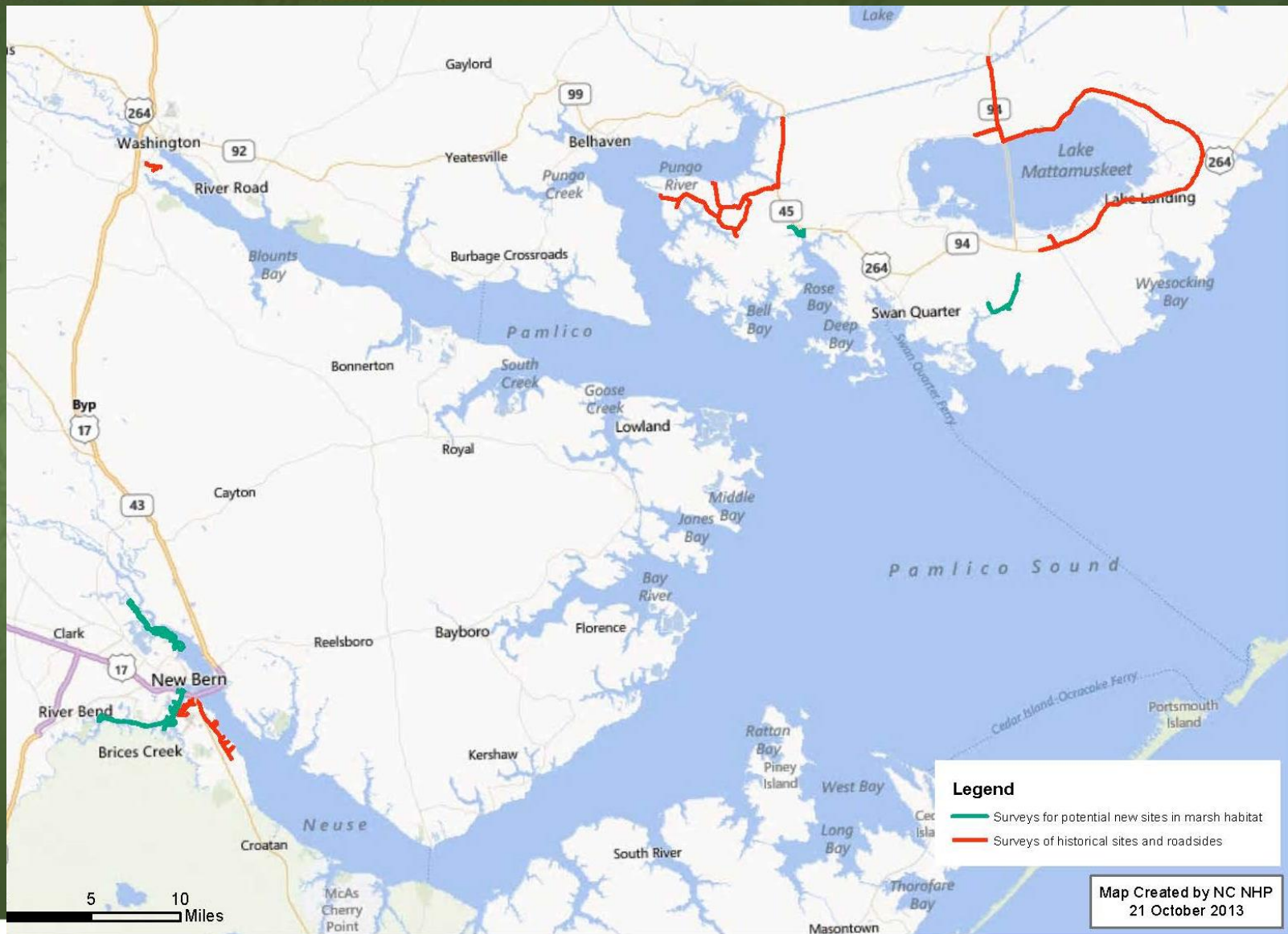
- Conducted Surveys by boat
- Improved plant and habitat identification skills

2013 Surveys in NC

Goal: Survey high quality marshes near historical locations



2013 Surveys in NC



8 biologists from NCNHP, APNEP, USFWS surveyed
by motor boat, kayak, and on foot

Potential
Habitat:
High Quality
marshes at
Trent River



Potential Habitat: High Quality marshes at Lower Neuse River



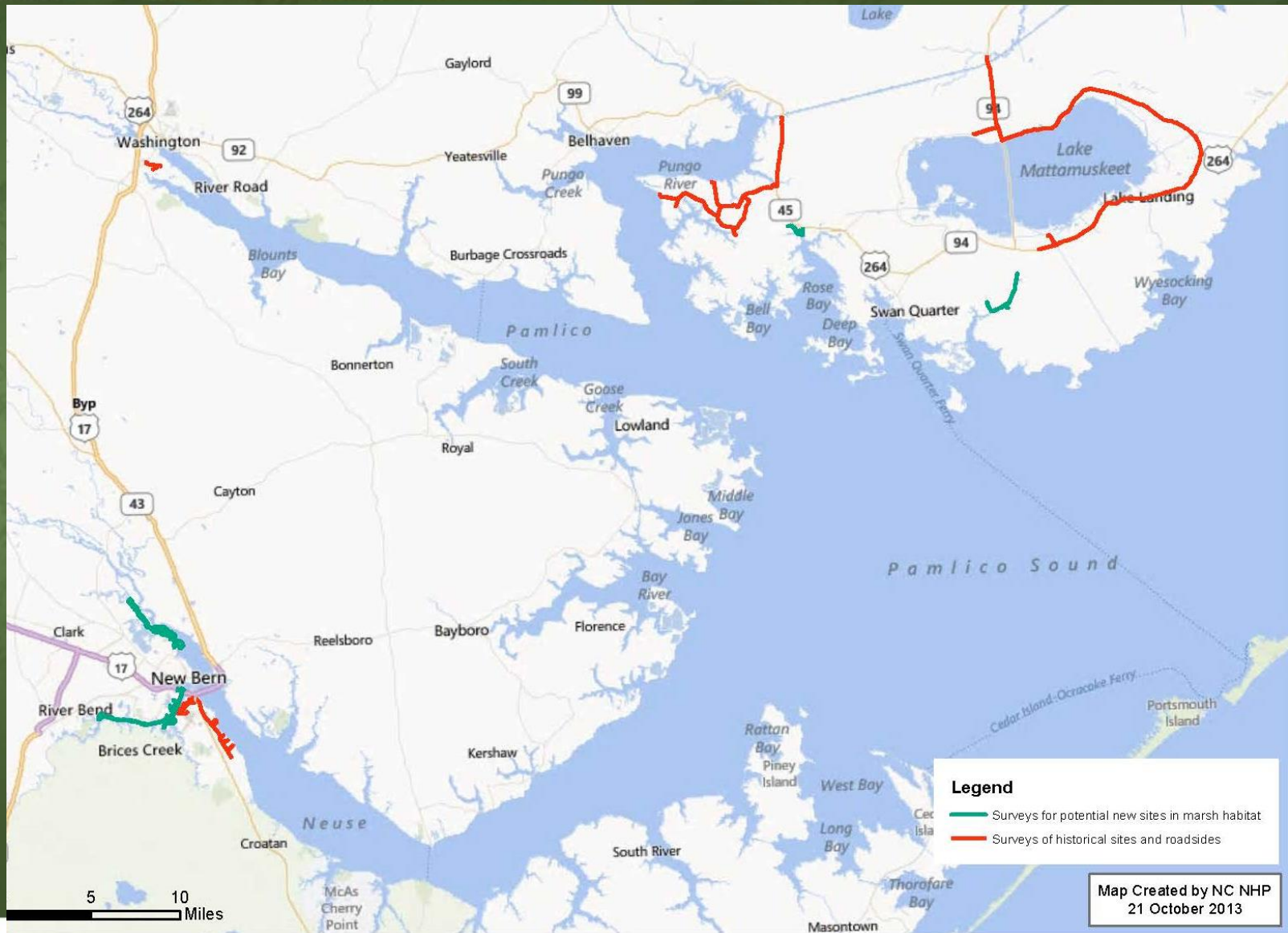
Historical locations: Ditches and canals near old US 70



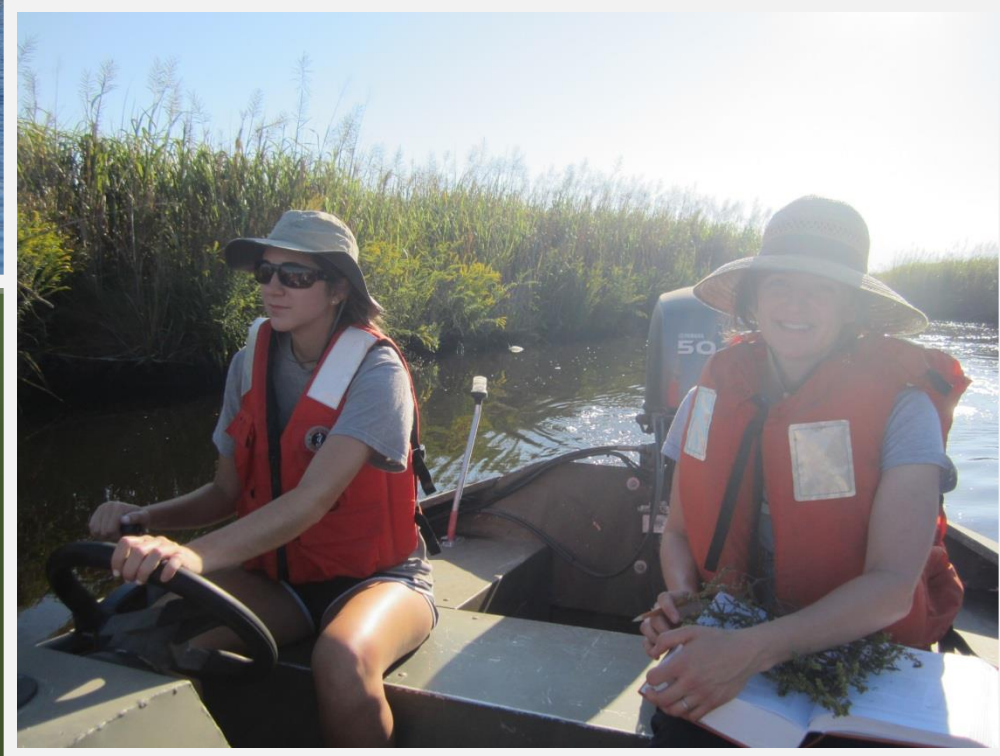
Historical locations:
Ditches and canals
near old US 70



2013 Surveys in NC



Potential habitat:
Canals and marshes
of Swanquarter
NWR



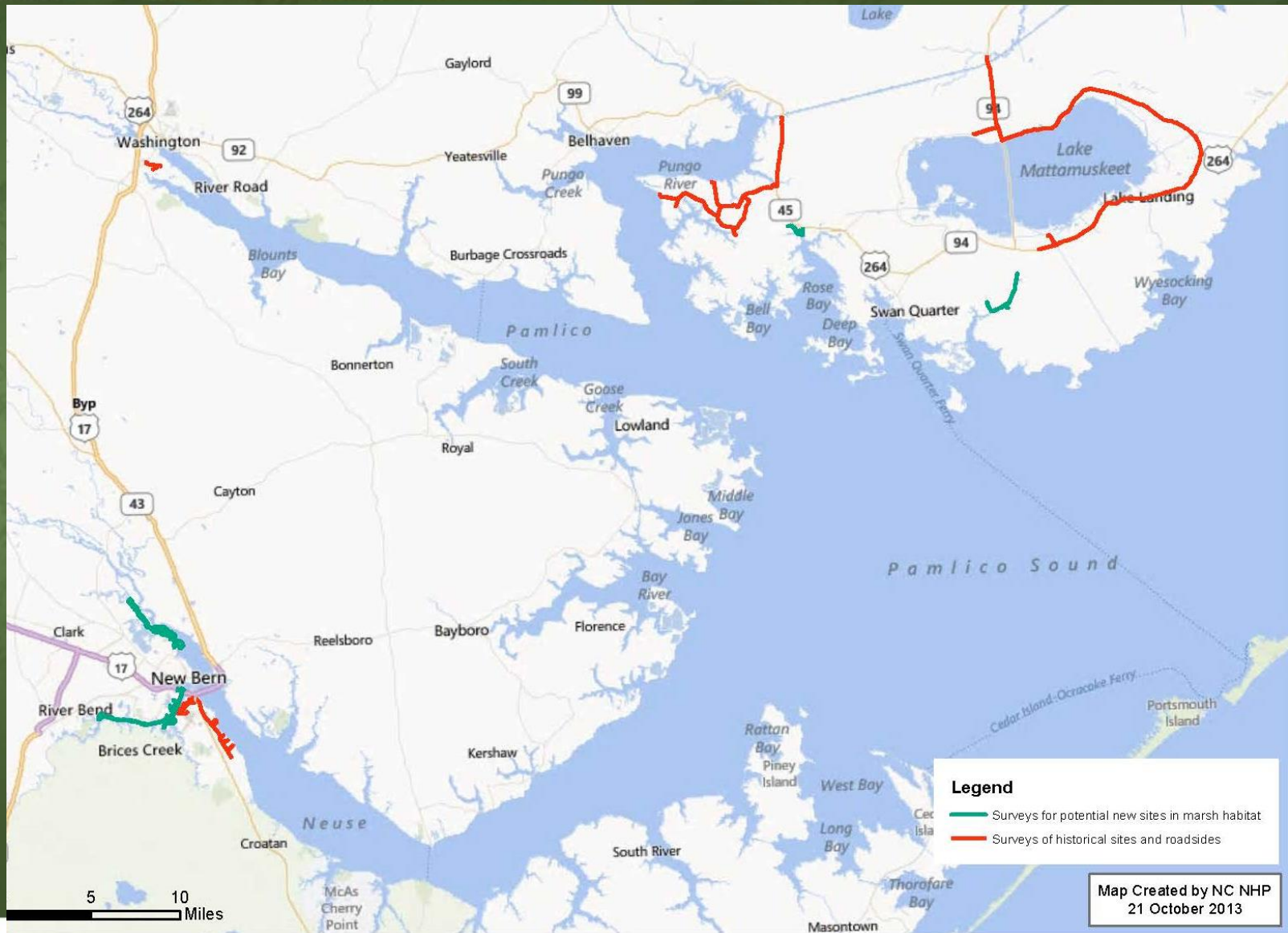
Historical locations
and potential
habitat: ditches
and bridges near
Lake Mattamuskeet



Historical locations
and potential
habitat: ditches
and bridges near
Lake Mattamuskeet



2013 Surveys in NC





Historical location:
ditch near
Washington



← *Aeschynomene virginica*
plant

Historical location:
ditch near
Washington



Threats:
hydrology
herbicide
competition
herbivory



Tobacco budworms
eating seeds

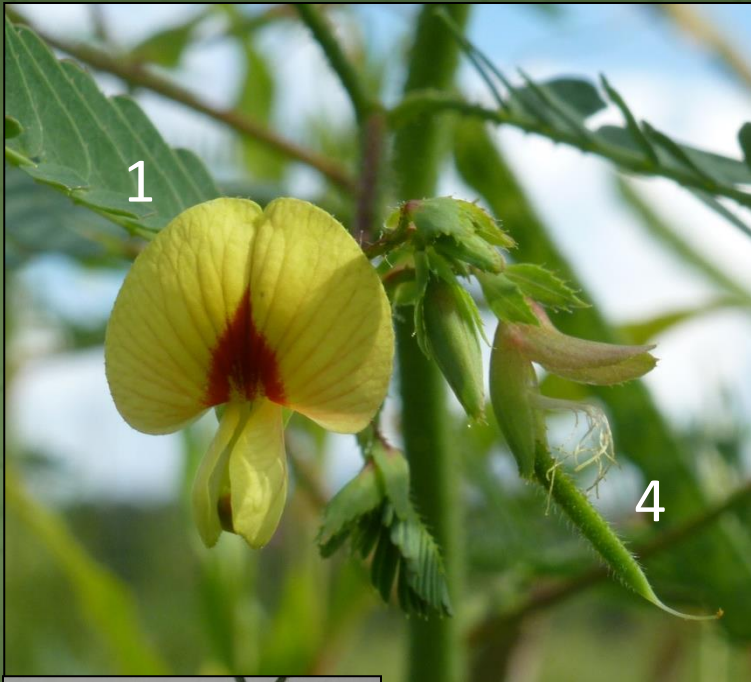


Annual plants need
their seeds!

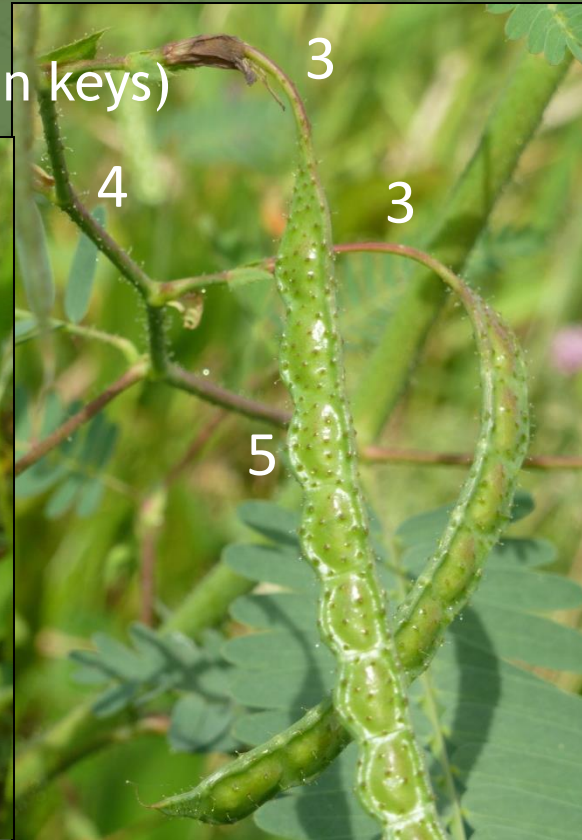
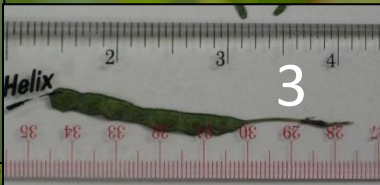
The most
imperiled species
in NC?



Sensitive Joint-vetch (*Aeschynomene virginica*)



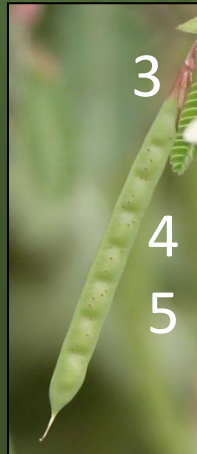
1. Flower (“standard”) lemon-yellow
2. Distinct red veins (esp. on back)
3. Long stipe (12-25 mm)
4. Fruit and stem stipitate-glandular (not in keys)
5. Fruit papillose (not in keys)



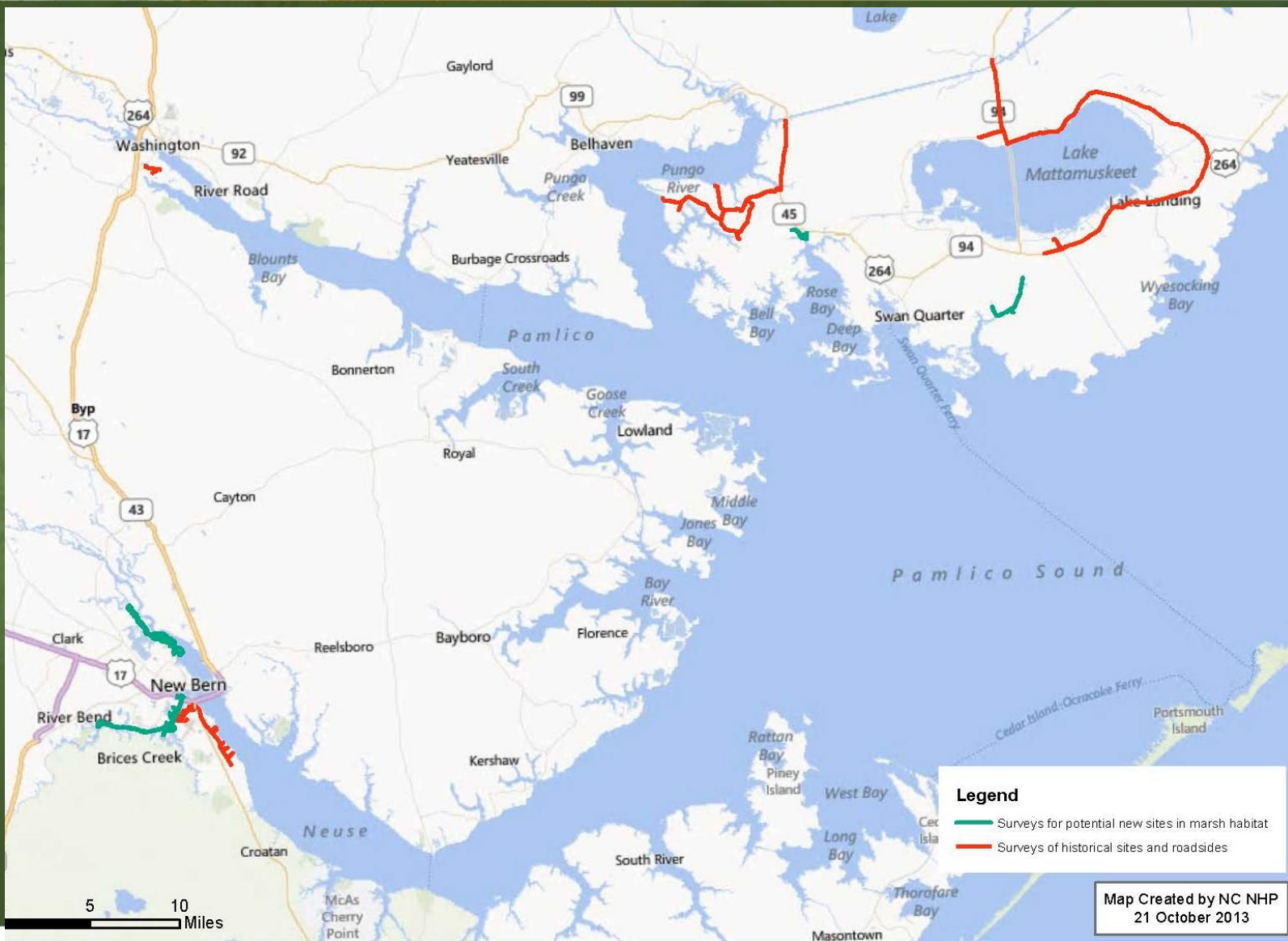
Indian Joint-vetch (*Aeschynomene indica*)



1. Flower (“standard”) butter-yellow to pale-peach
2. Indistinct red veins (esp. on back)
3. Short stipe (4-10 mm)
4. Fruit and stem not glandular (not in keys)
5. Fruit smooth or sparsely papillose (not in keys)



2014:



Lake Mattamuskeet!

Thank You!

USFWS: Dale Suiter, Allie Stewart

APNEP: Dean Carpenter, Lindsey Smart

VA NHP: Johnny Townsend, Darren Loomis

MD NHP: Wesley Knapp

NCNHP: Laura Robinson, Misty Buchanan,
Scott Pohlman, John Finnegan

