

Copperheads on the Edge



Tom Tynning Berkshire Community College NETWC 14 Sept 2016

New England Snakes

Gartersnake

Eastern Ribbonsnake*

Smooth Greensnake*

Eastern Wormsnake*

Dekay's Brownsnake*

Redbelly Snake

Ringneck Snake*

Northern Black Racer*

Eastern Ratsnake*

Eastern Hognose Snake*

Common Watersnake*

Milksnake*

Copperhead*

Timber Rattlesnake*

Arguments Negating the Value of Peripheral Populations

Abundant Center Model (Aikens and Roach 2014)

Edge popn's are more vulnerable to extinction

Funding for more stable areas

Edge populations continue only as “Sinks” constantly being fed by growth from central populations

Arguments Supporting Conservation of Peripheral Populations

Bahn, et al. 2006

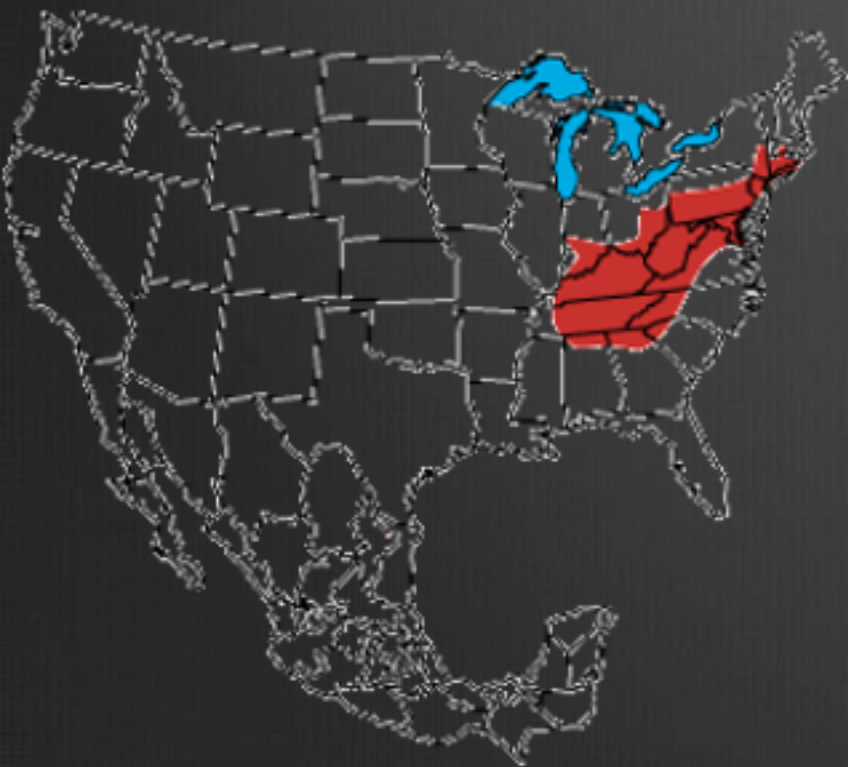
Edge populations are exposed to more ecological variables that may lead to genetic diversity

Density may, in fact, be higher than in central parts of the range

Peripheral populations may be easier to conserve


Edge Populations may better explain current constraints on geographic distribution expansion

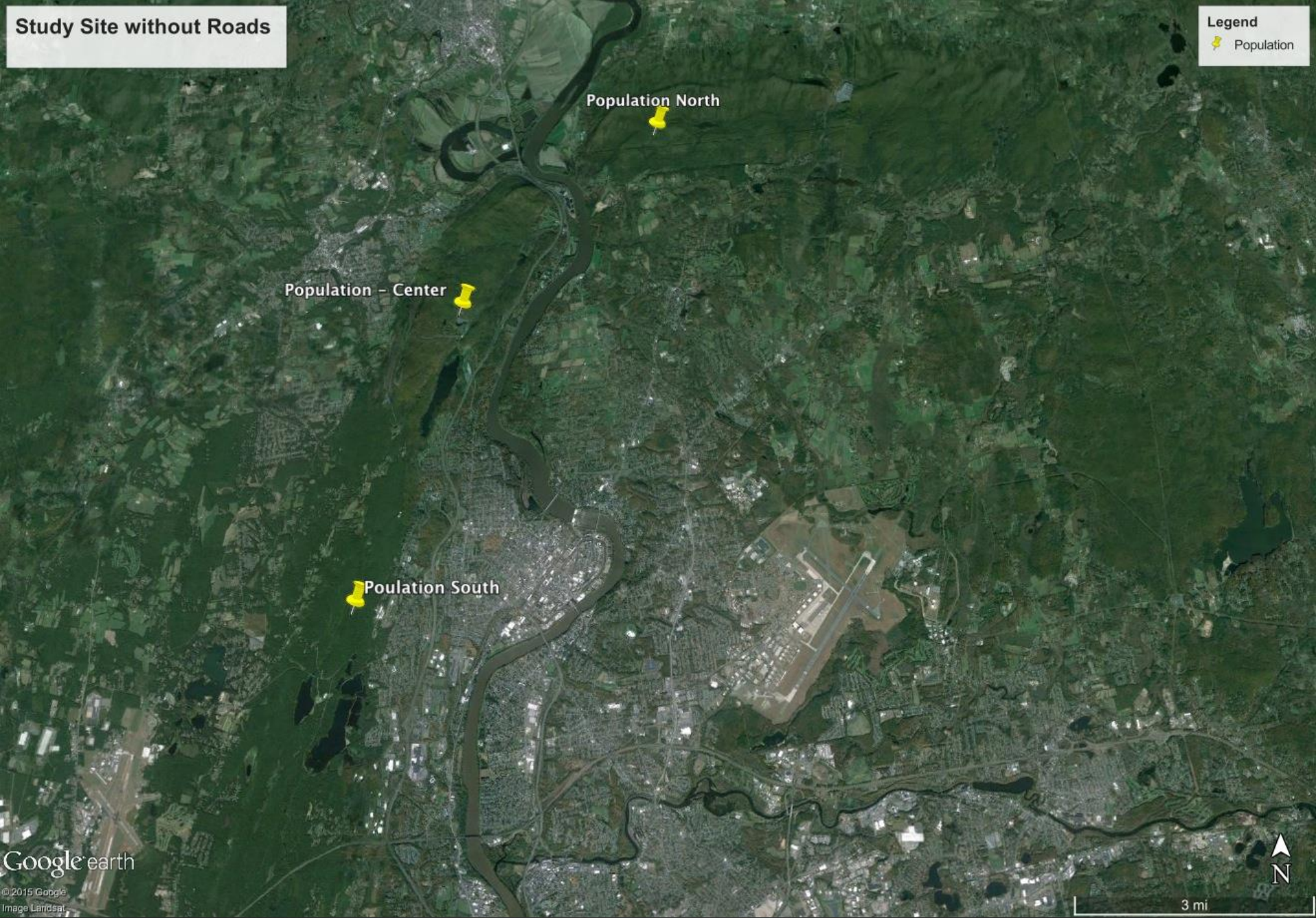
Northern Copperhead and Range Map



Study Site without Roads

Legend

 Population

















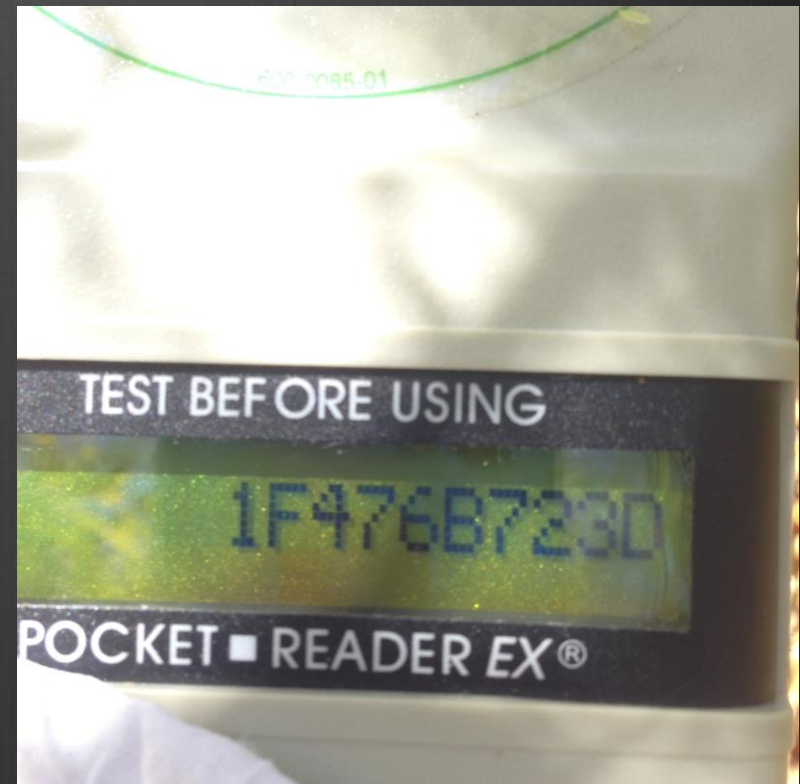








Implanting transmitter



PIT tag reader

Copperhead Population Landscape









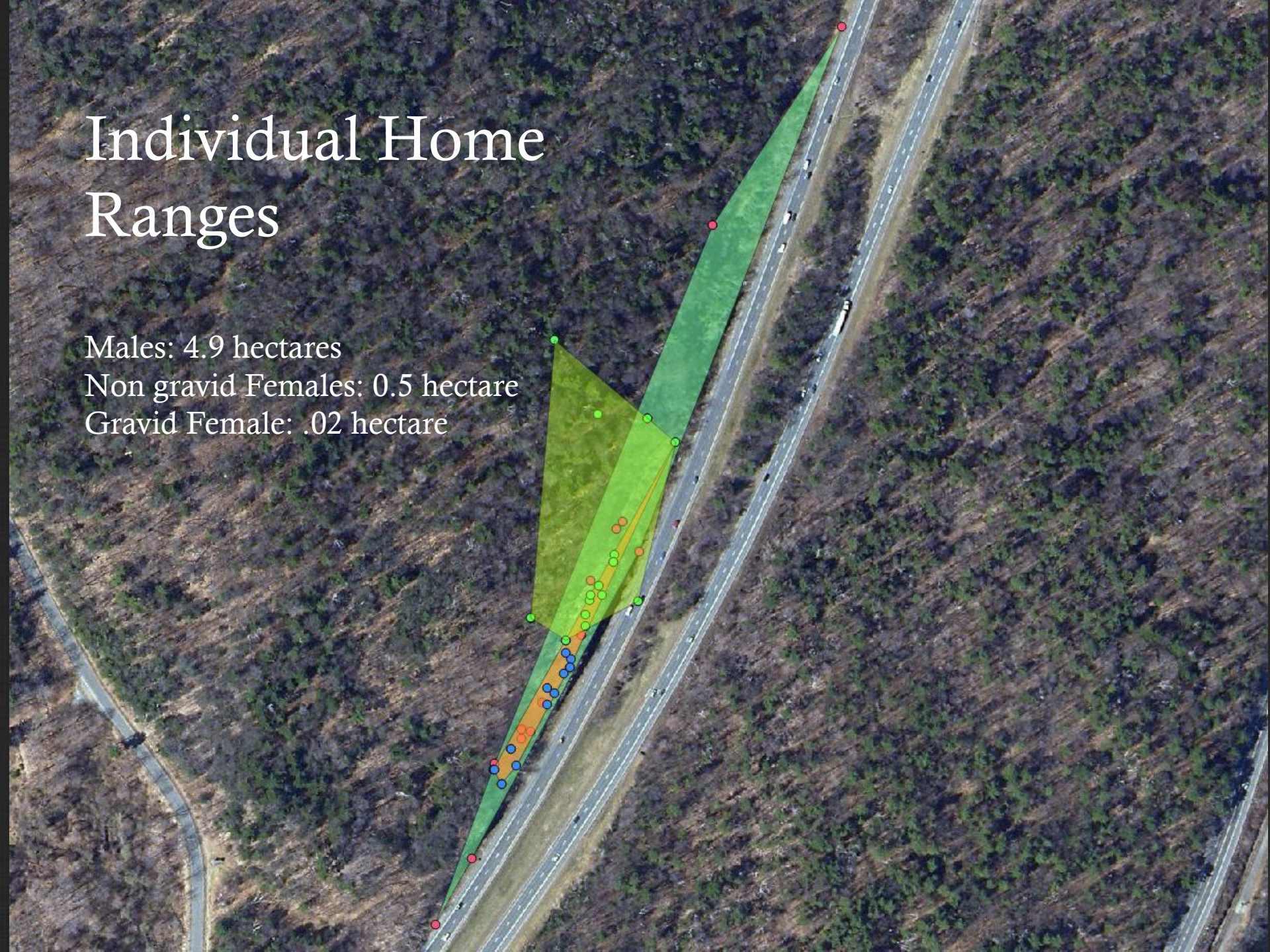
LOCATIONS (N=128)
of 5 adult Copperheads
(3 F, 2M) 2010 to 2012.

Individual Home Ranges

Males: 4.9 hectares

Non gravid Females: 0.5 hectare

Gravid Female: .02 hectare



Characteristics of individuals

1. Longevity
2. Home Range
3. Sex
4. Migration
5. Territory
6. Food Chain

Characteristics of populations

1. Age Distribution
2. Population Home Range
3. Sex Ratio
4. Immigration/Emigration
5. Carrying Capacity
6. Food Web

Population Home Range

Total: 6.02 hectares



INVASIVE SPECIES AND HABITAT IMPROVEMENT





D. Paulson photo



Applications began 2014









D. Paulson photo





D. Paulson photo



Den site - 2007



2014

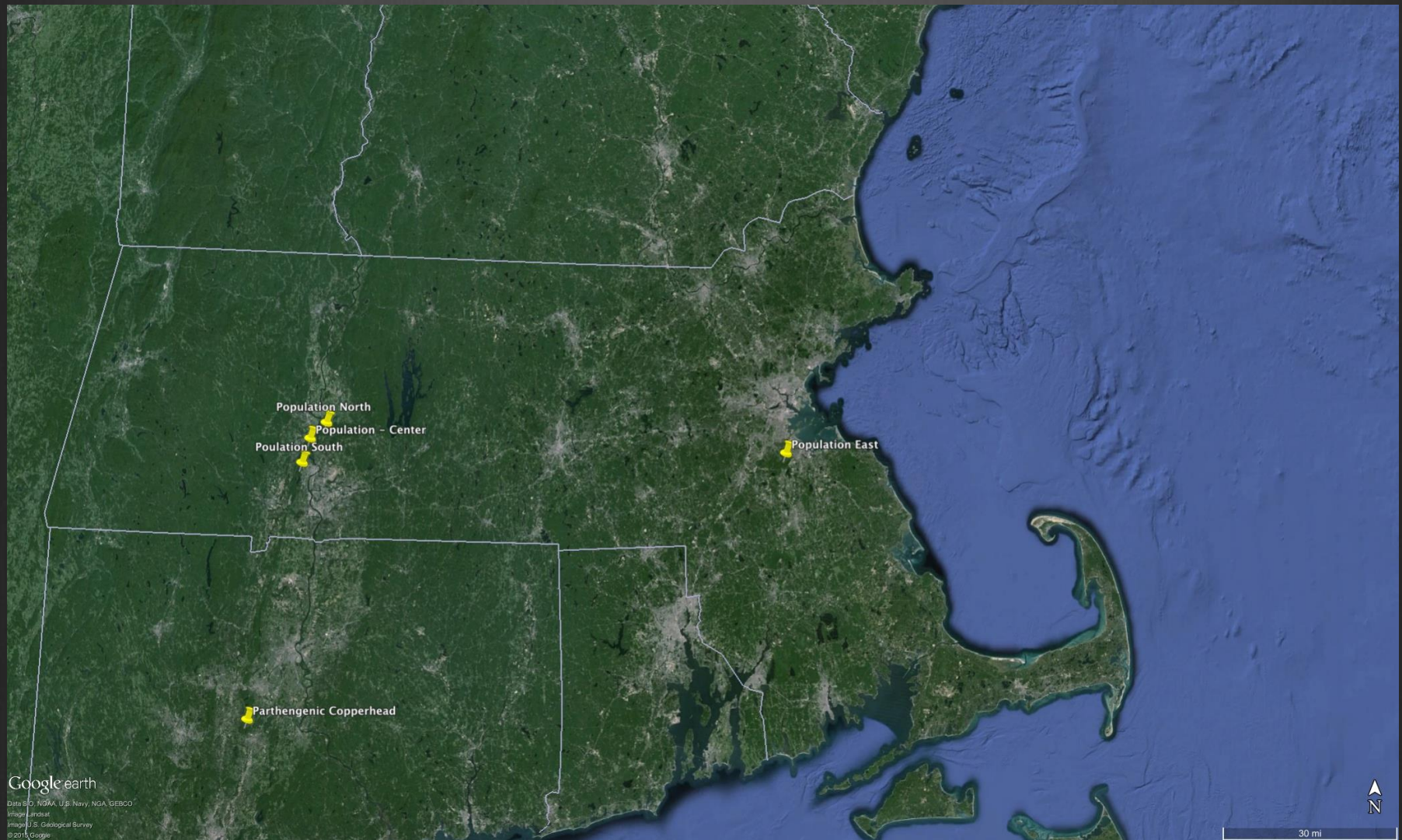


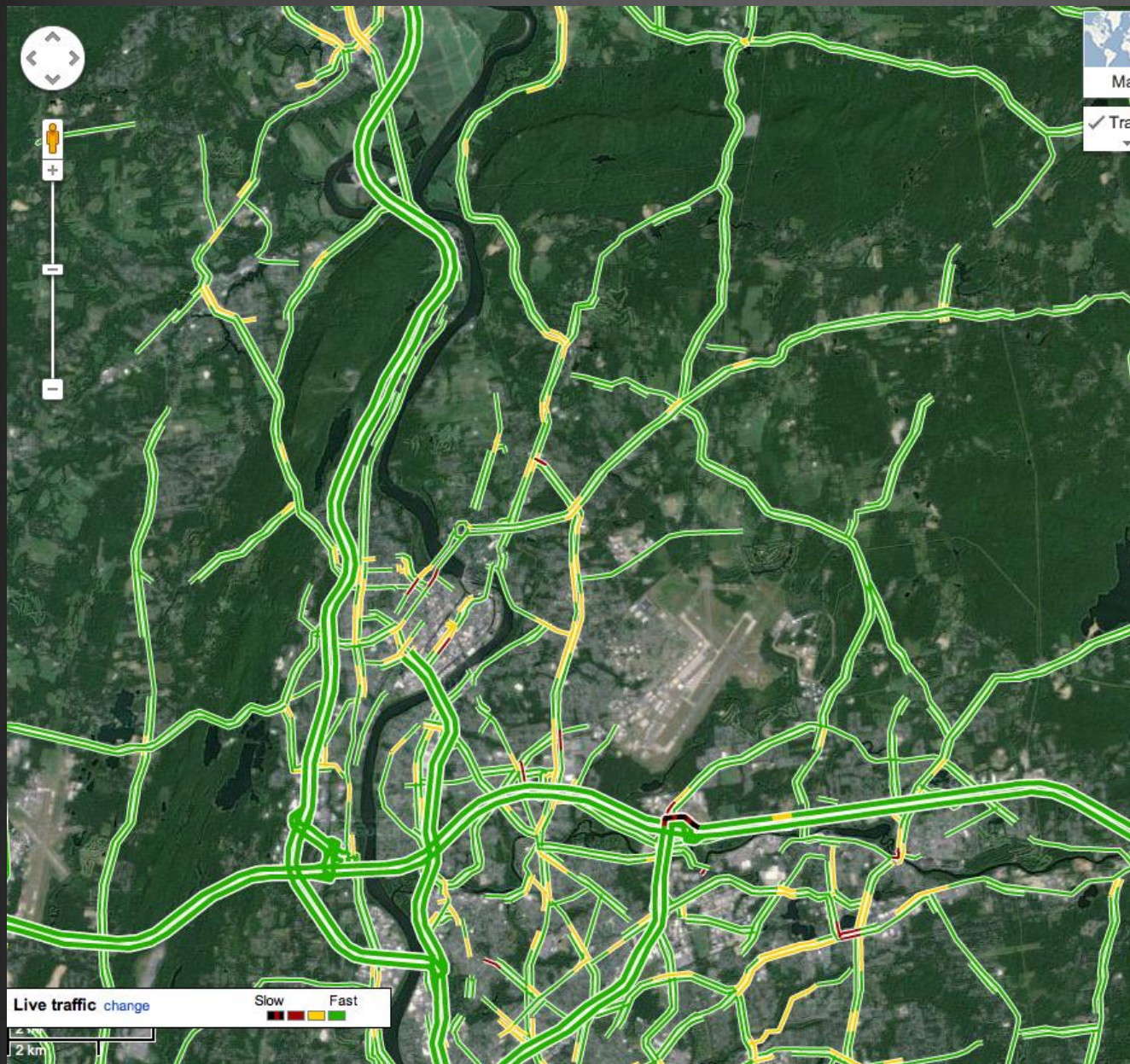
2015

September 11, 2016



Northernmost Populations of Northern Copperheads on Earth





Traffic use on Sunday,
April 19 noon.

Facultative parthenogenesis discovered in wild vertebrates



Warren Booth^{1,*}, Charles F. Smith^{2,3},
Pamela H. Eskridge³, Shannon K. Hoss⁴, Joseph
R. Mendelson III^{5,6} and Gordon W. Schuett^{3,7}

"Virgin Birth" Seen in Wild Snakes, Even When Males Are Available

Who needs males? Sexless reproduction might be surprisingly common.

By **Ker Than**, for National Geographic News
PUBLISHED SEPTEMBER 15, 2012



A copperhead mother intertwined with her "virgin birth" son.
PHOTOGRAPH BY PAM ESKRIDGE AND CHARLES SMITH



An Effect of Peripheral Populations?















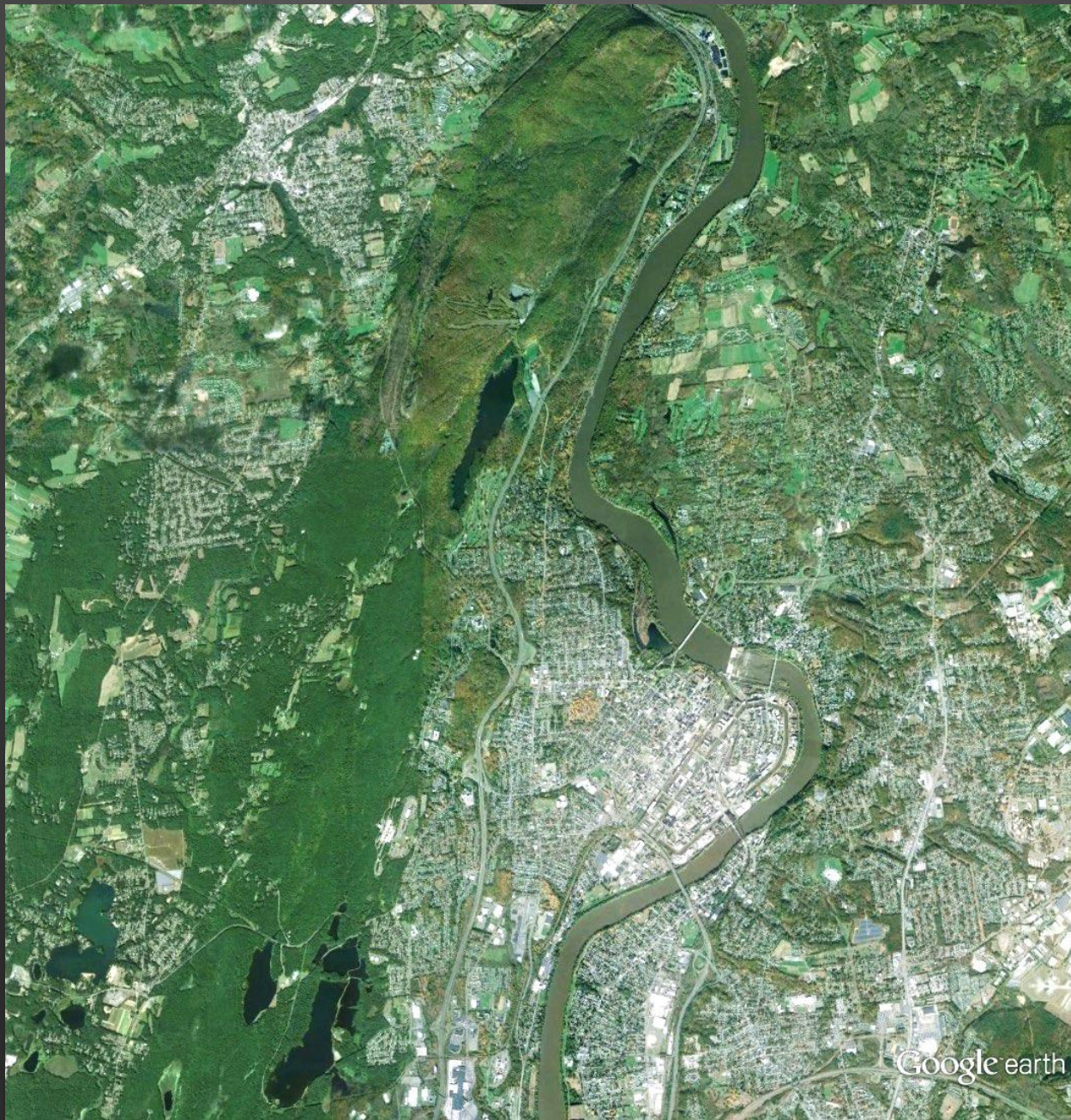






D. Paulson photo





Google earth