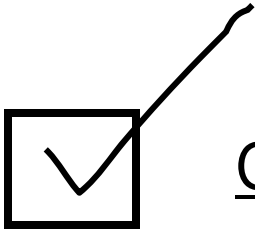


Bird Research Update

Claire Varian Ramos and Dan Cristol
College of William & Mary



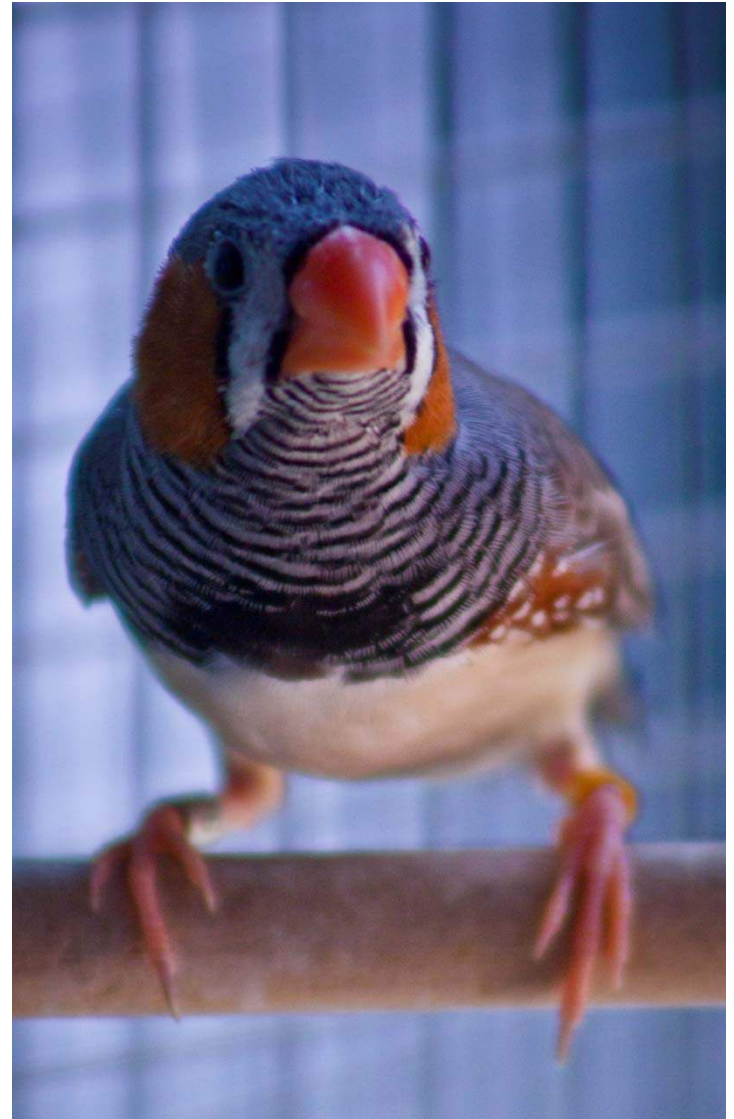


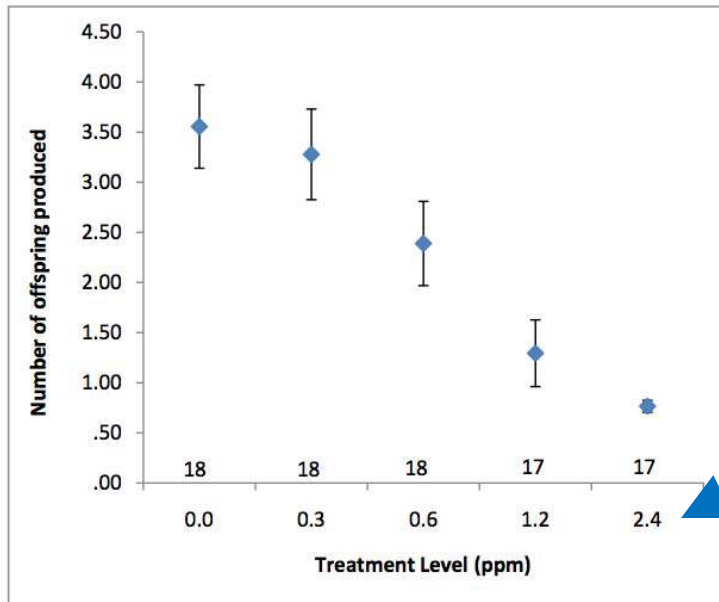
Completed dosing study:

180 adult finches dosed and
bred for one year
@ 0.0, 0.3, 0.6, 1.2, 2.4
ppm methylmercury

Measured same things as at
South River:

- Reproductive success
- Behavior
- Hormones
- Immunity

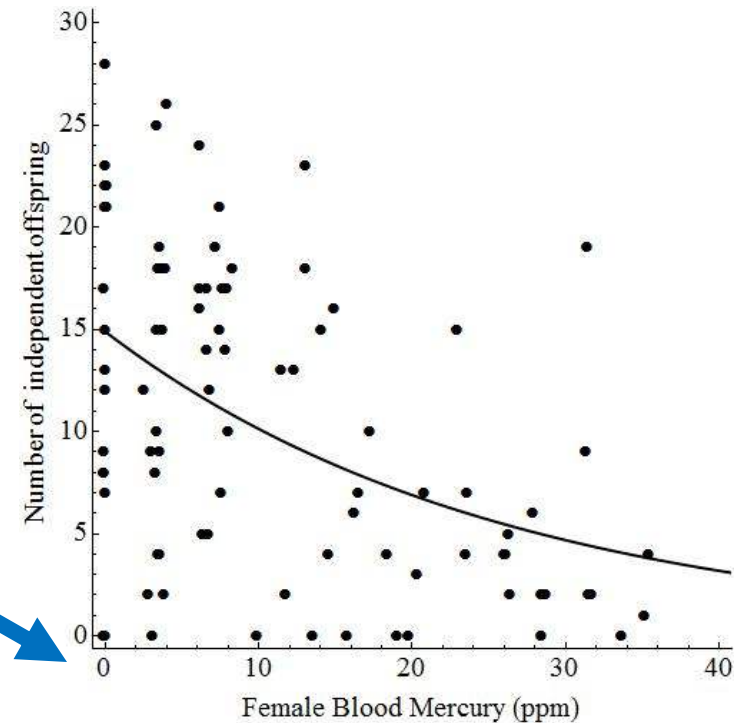




Dietary dose

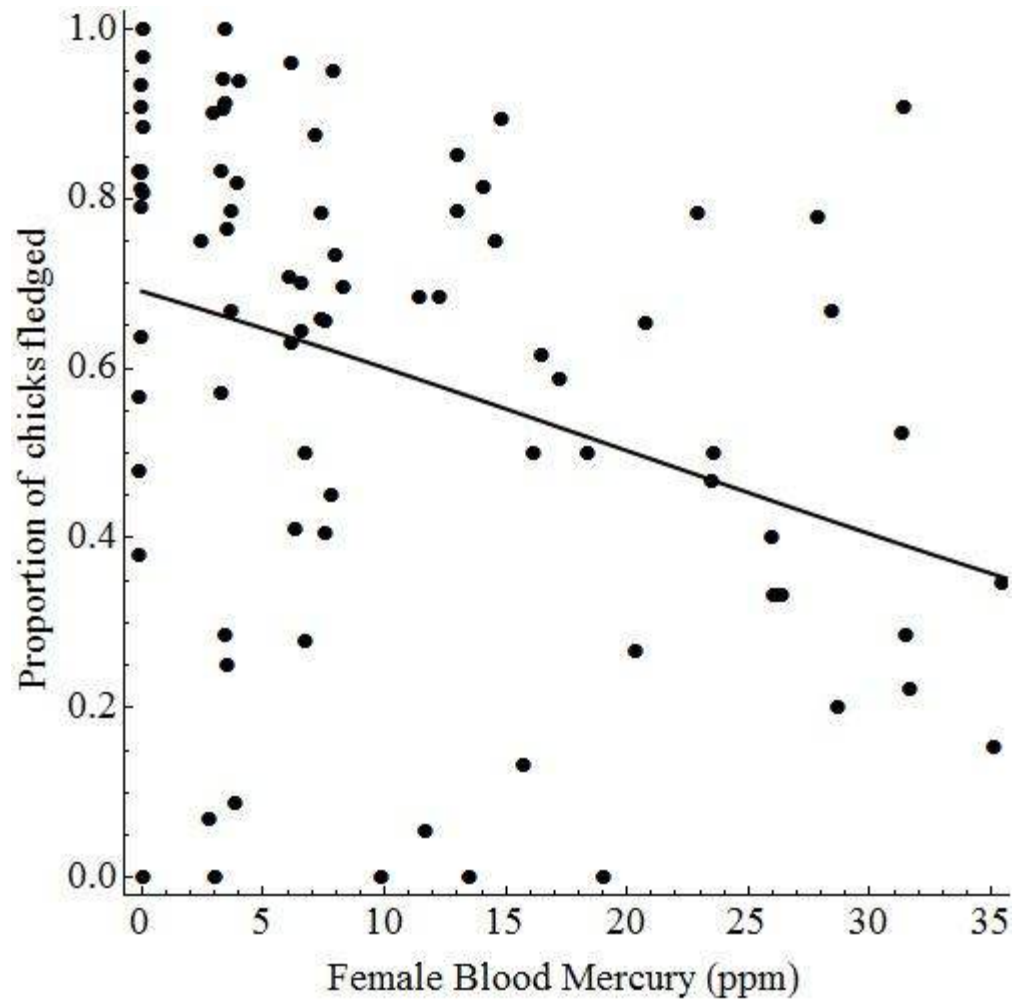
One "breeding season"

Blood mercury level



"Lifetime" reproductive success

Reproductive loss most pronounced during nestling stage



Preliminary conclusions:

Memory - severe disruption

Flight - possible effect

Molt - earlier

Song - lower pitch/simpler

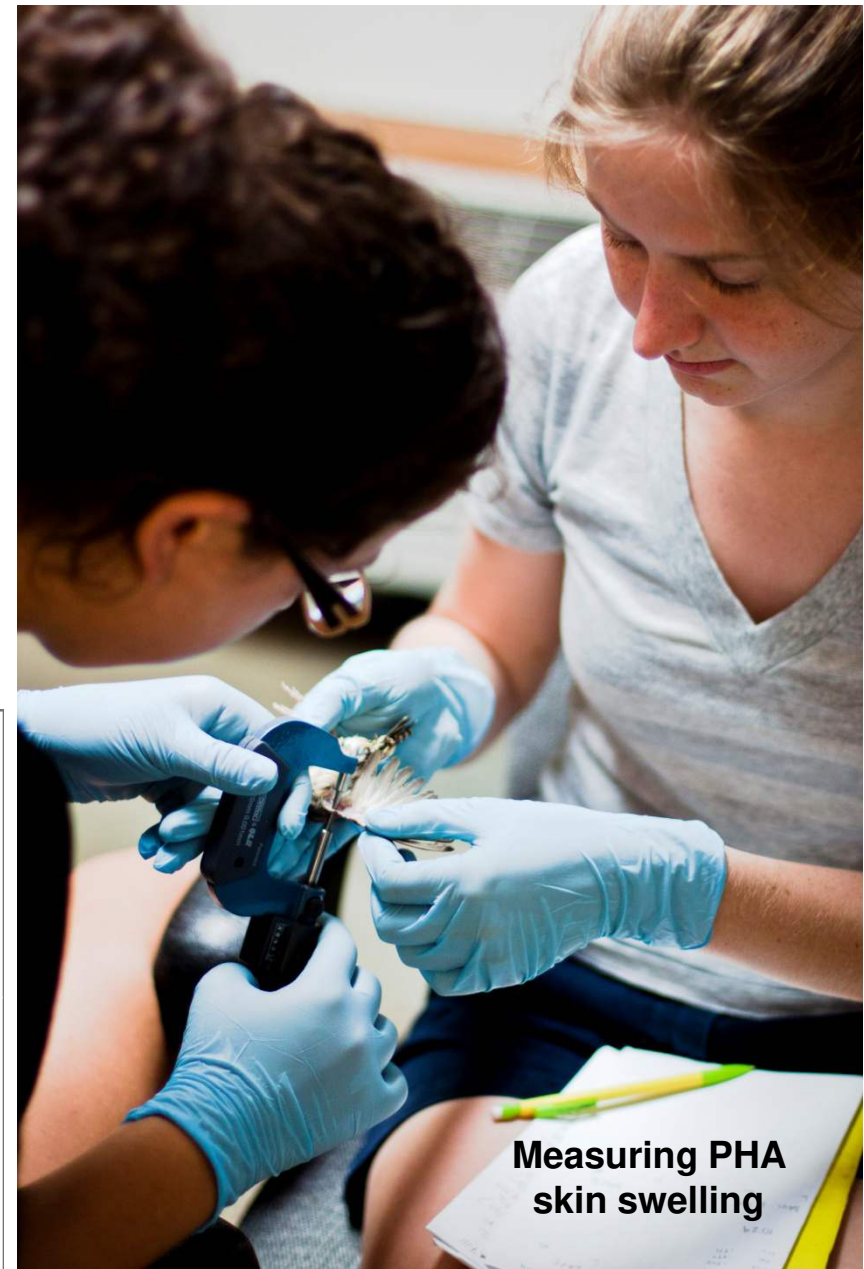
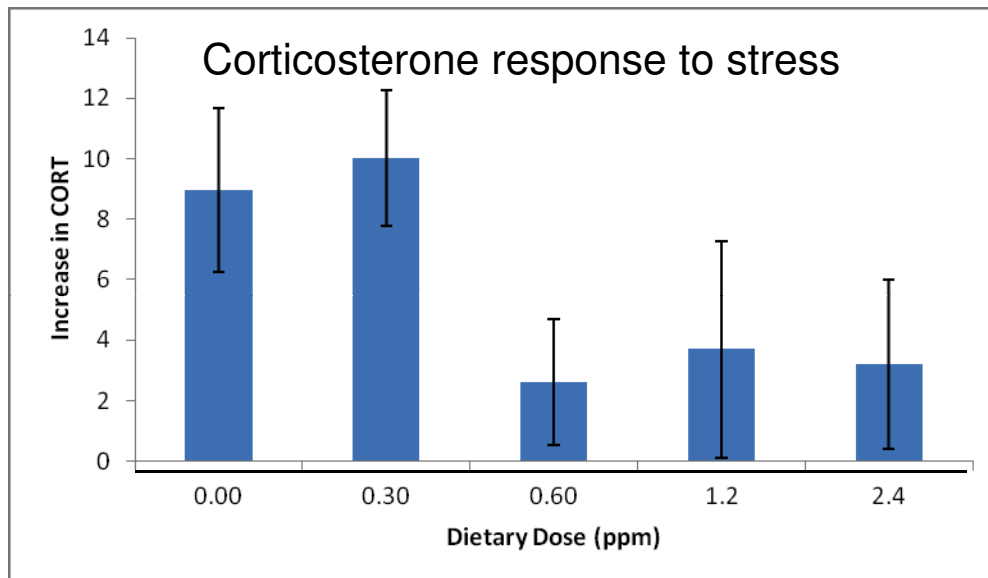
Parenting - no effect

Testosterone - no effect

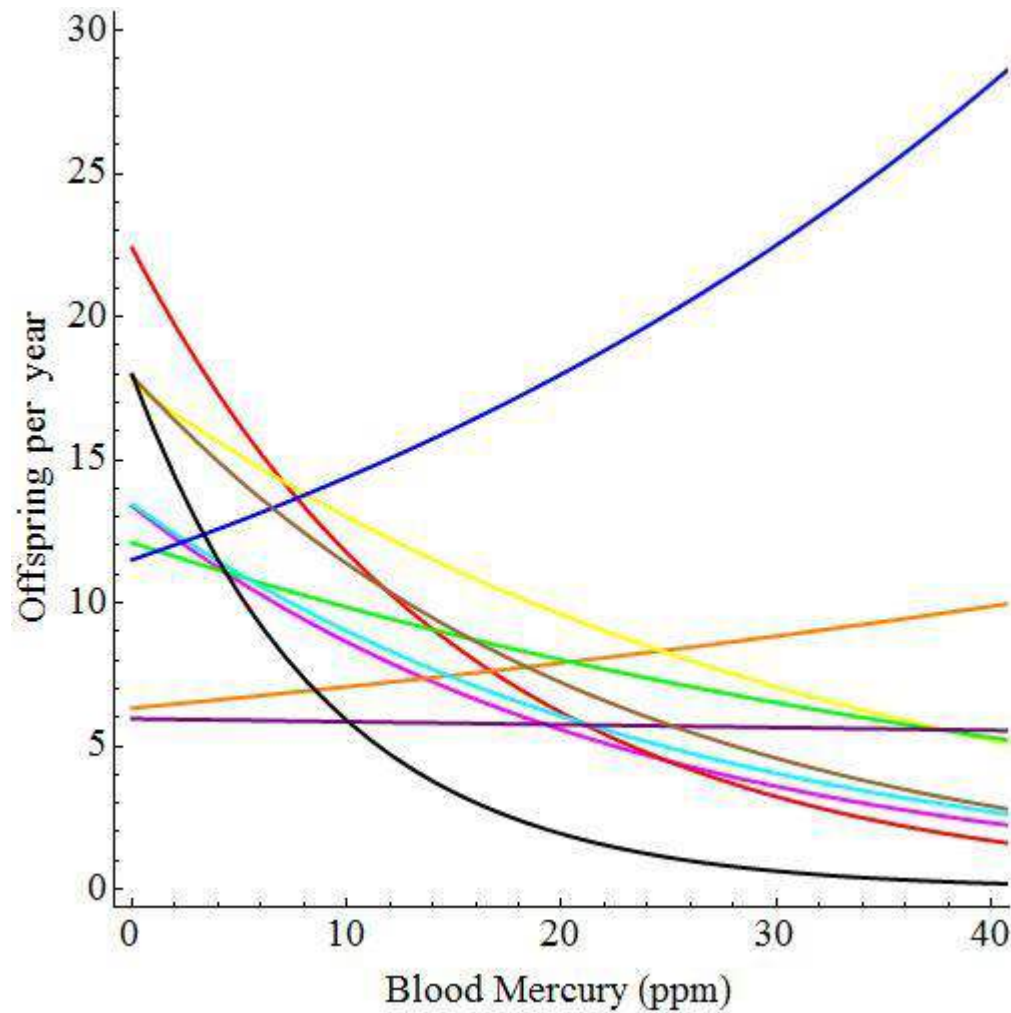
Corticosterone - suppression

PHA immune response - no effect

B-cell immune response - reduced



Genetic Variation in Response



Depuration Study

- Flight and immune measured.
- Organs collected
- Removed from mercury in June
- Full molt +5 months
- Re-measured
- Collections began yesterday, completed tomorrow.



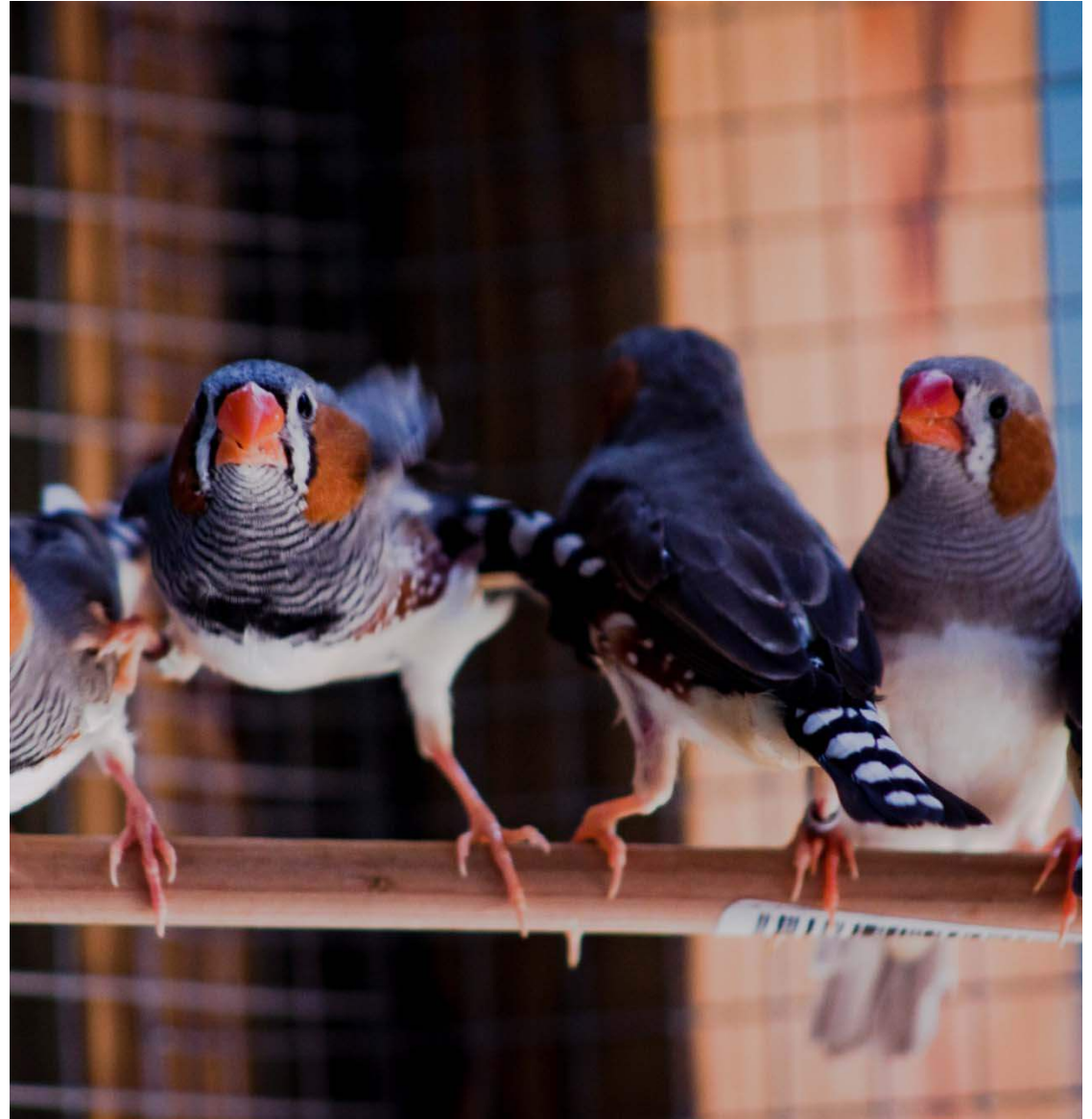
Ongoing dosing studies

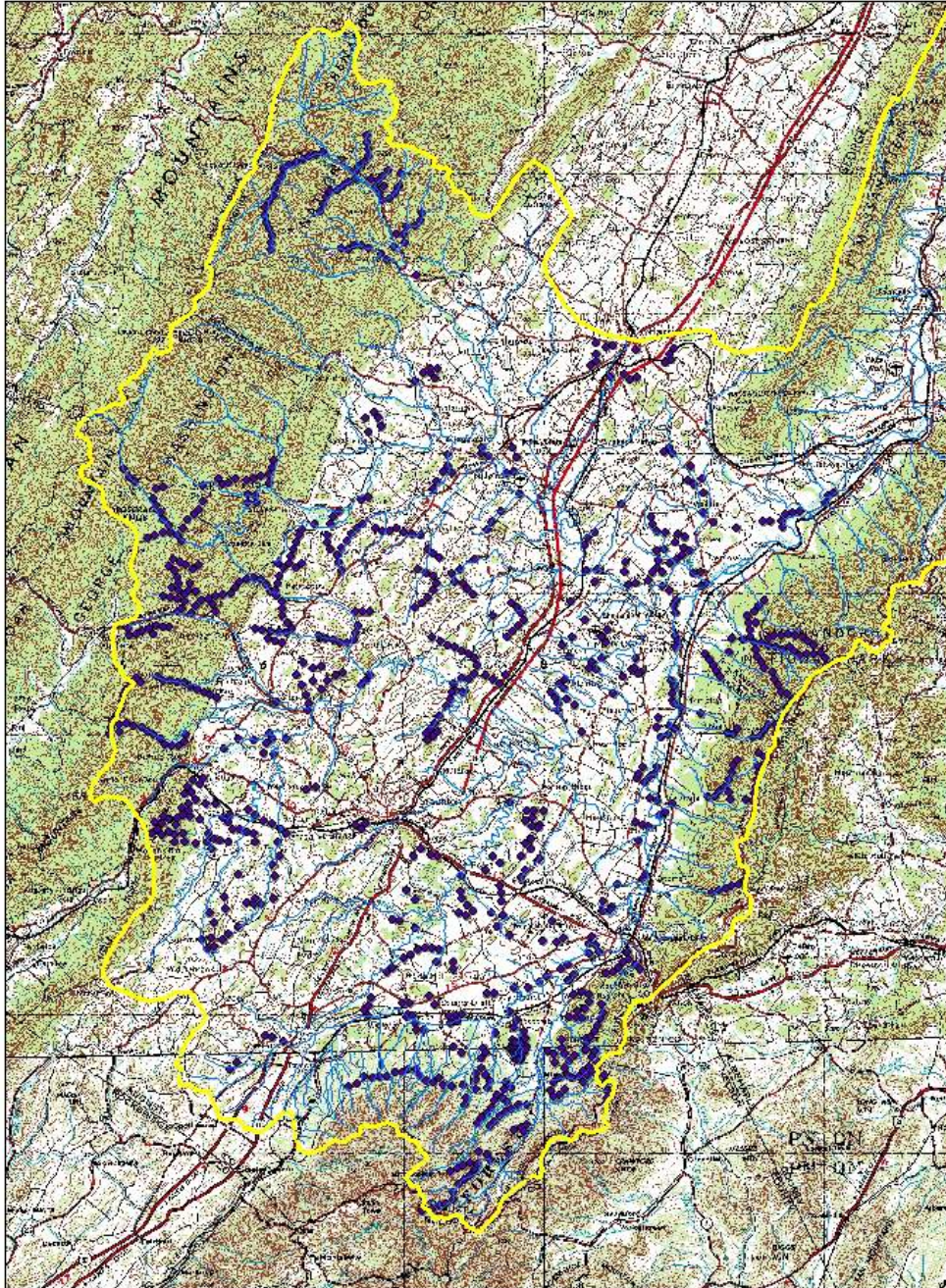
Outdoor Breeding

- Adult exposed
- More challenging
- Ends next week

Developmentally Exposed

- Replicating original study
- Ends June





Breeding bird survey points:

- June 2011, 2012
- 950 points surveyed for 10min each
- 250 m radius circles, >500 m apart
- 12,000 birds of 75 species detected

Can predict which and how many songbirds will occur in any site:

- Upland forest
- Riparian forest
- Developed
- Row crop
- Pasture-Hay
- Early successional

Report due in December; already supplying data to URS, FWS, DuPont for restoration and injury plans

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