Crawdawgs of Connecticut

(recently collected records)

Mike Beauchene , Ernie Pizzuto of WPLR
Robert Jacobs, Neal Hagstrom, Michael Humphries of Inland Fisheries

Background

- **Little interest for ALUS samples**
- **Thrown back as “by-catch”**
- **Thought of as “ubiquitous” and provide little useful information**
- **Definitive identification relies on form “1” males**
- **Not big enough to eat**

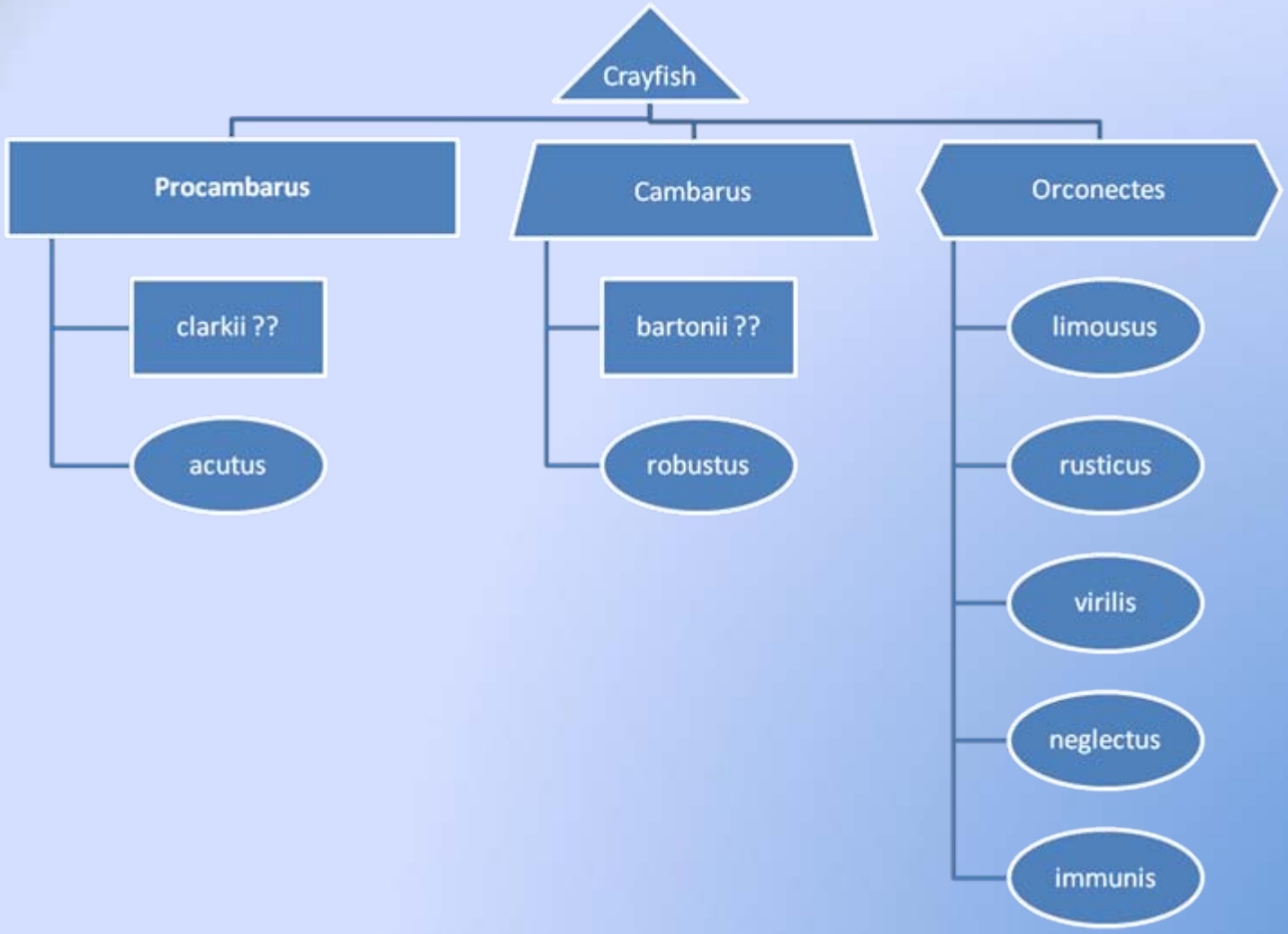
Foreground

- **CT DEP Wildlife interested in native species distributions**
  - **Freshwater Mussels (Biodrawversity)**
  - **Crayfish (Inland Fisheries)**
    - » **Mike Humphries had started collecting specimens**
    - » **Seasonal staff accumulated historical records**
- **WPLR crayfish as surrogate for fish tissue**
  - **pilot at probabilistic sites**
    - **Based on Chris Pennuto et. al. 2005**
- **More emphasis to eat local products**

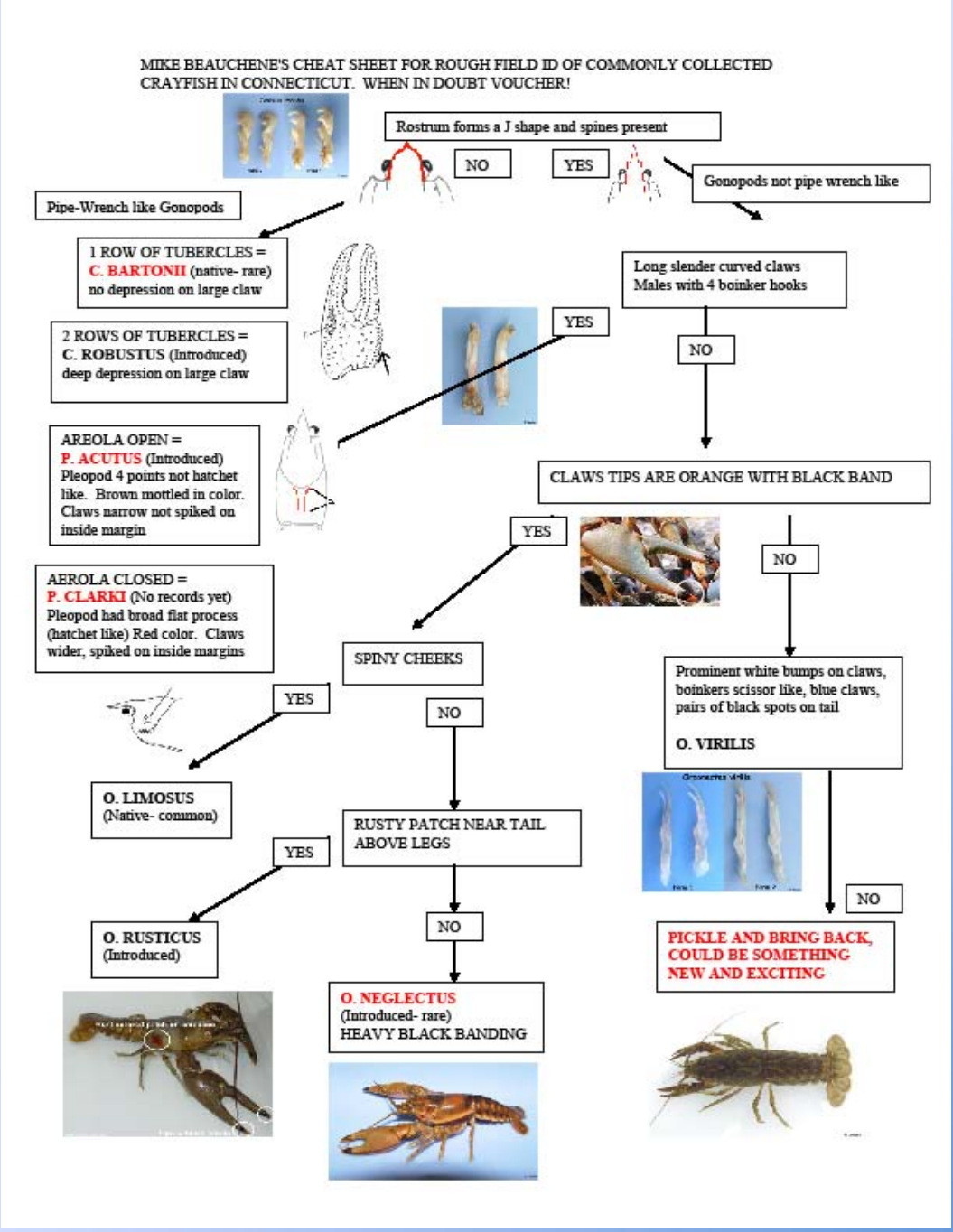
Synergistic Relationship

- **Water and Inland fisheries staff communicate and cooperate.**
  - **Water sampling 150-175 locations / year**
    - **primarily river and streams**
      - **ALUS sampling**
      - **Tissue contaminant pilot (Hg)**
  - **Inland fisheries sampling 75-100 locations / year**
    - **Lakes & Ponds**
    - **River and streams**

Short list of species



A simple flow chart to help in field ID.



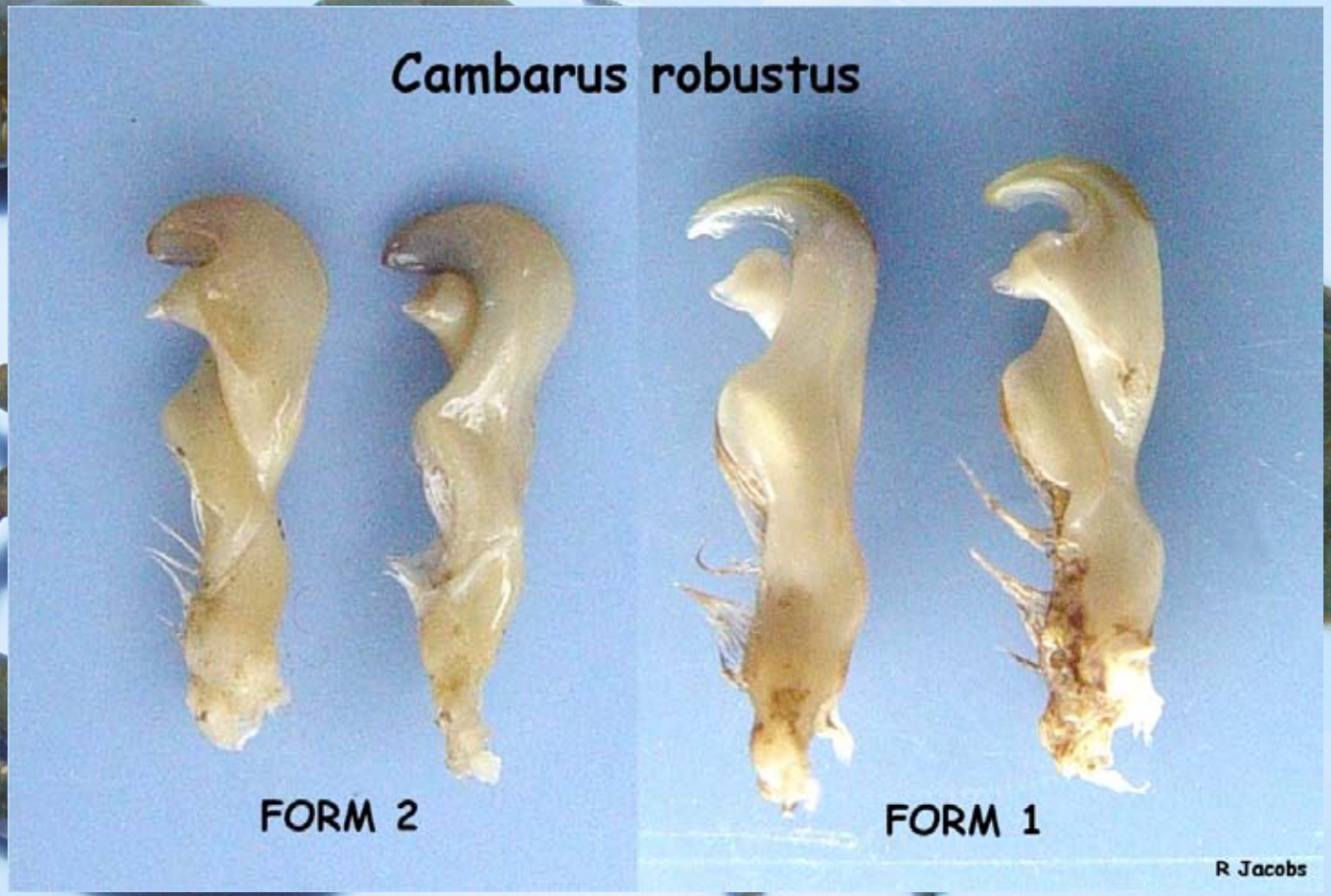
CLAW & ORDER

CSI: Crayfish Species Identification

THE REMAINDER OF THIS PRESENTATION CONTAINS GRAPHIC IMAGES OF CRAYFISH GONOPODS AND MAY NOT BE SUITABLE FOR ALL VIEWERS.

SUPERVISORY APPROVAL IS REQUIRED.

Cambarus robustus



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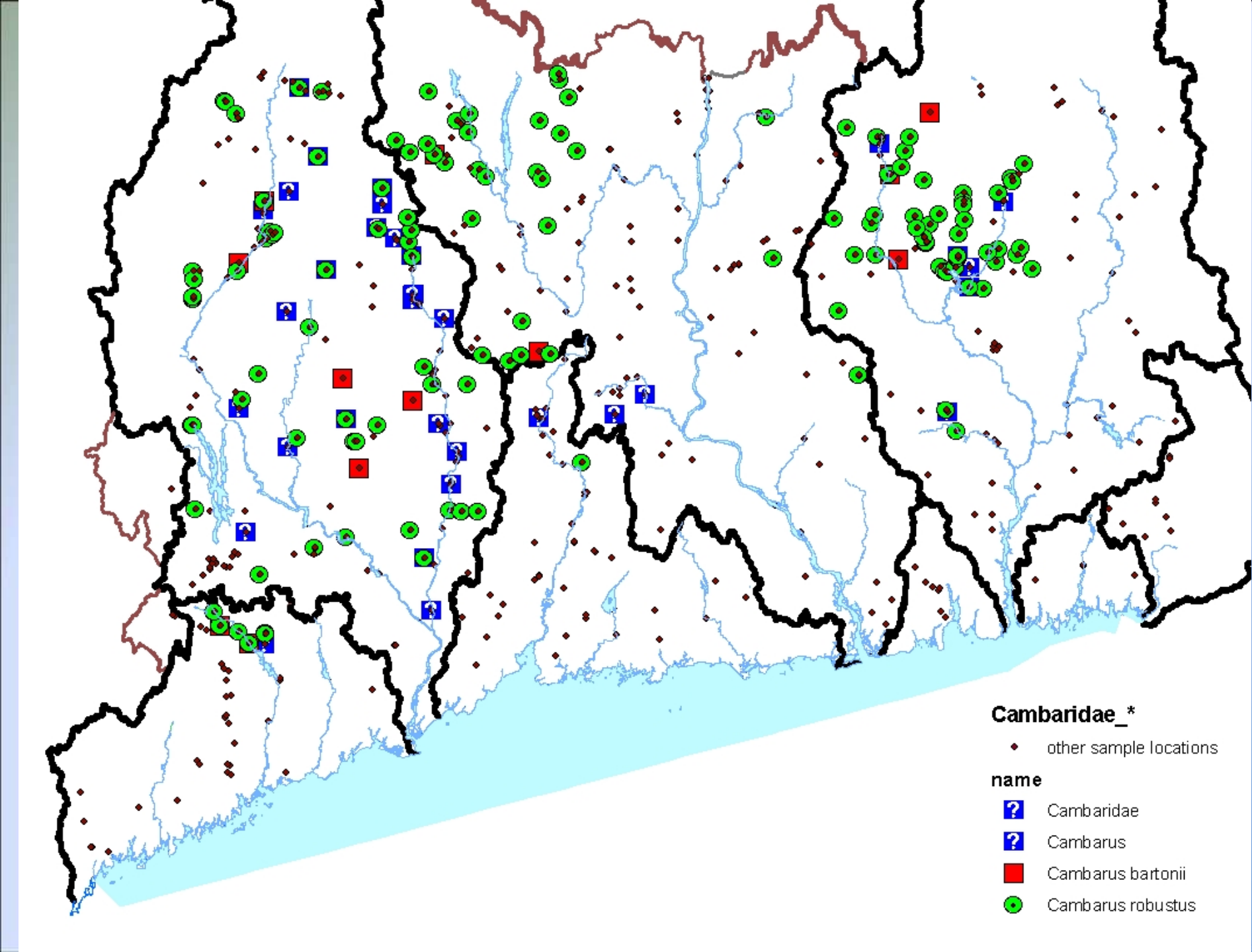
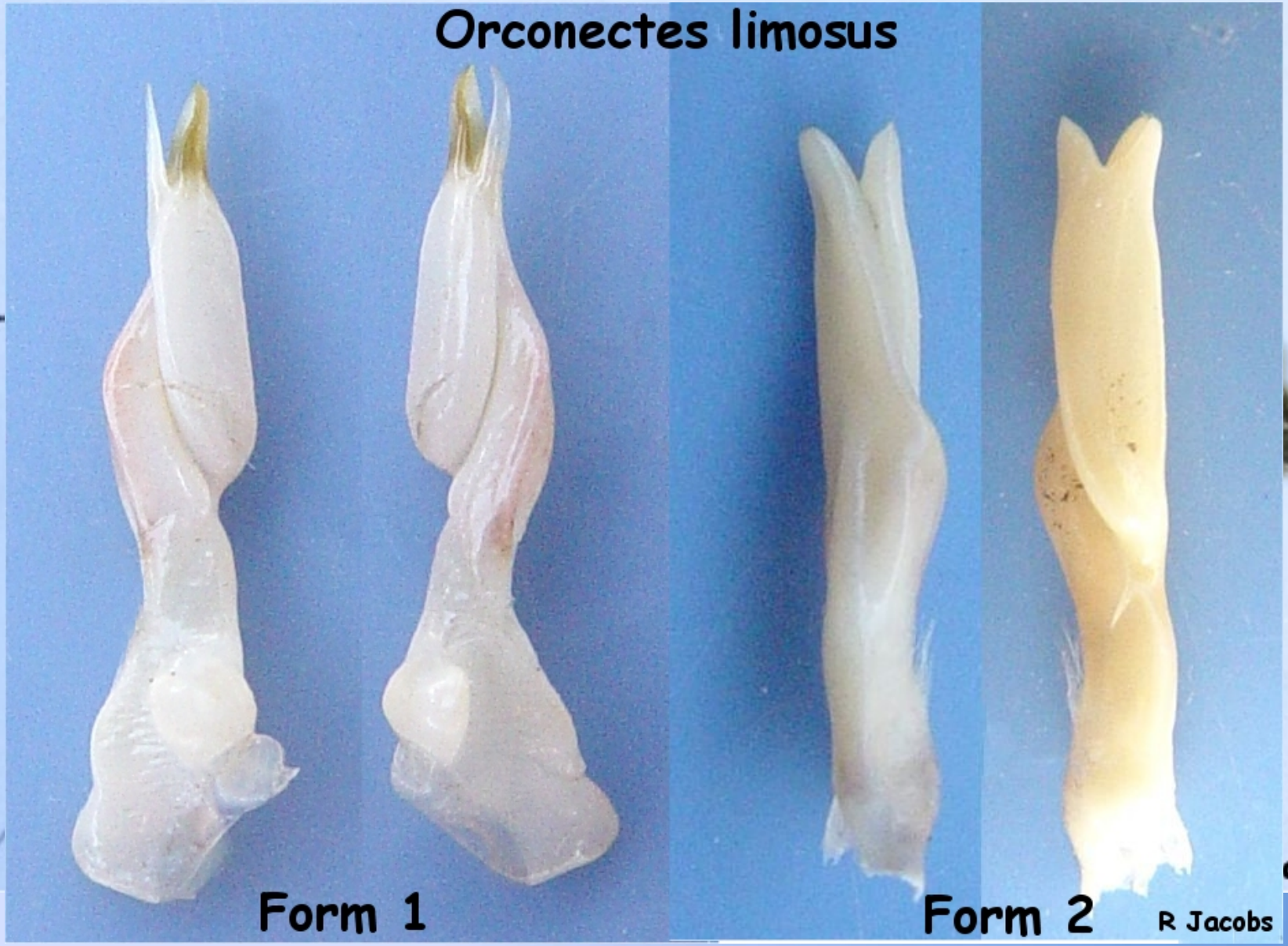
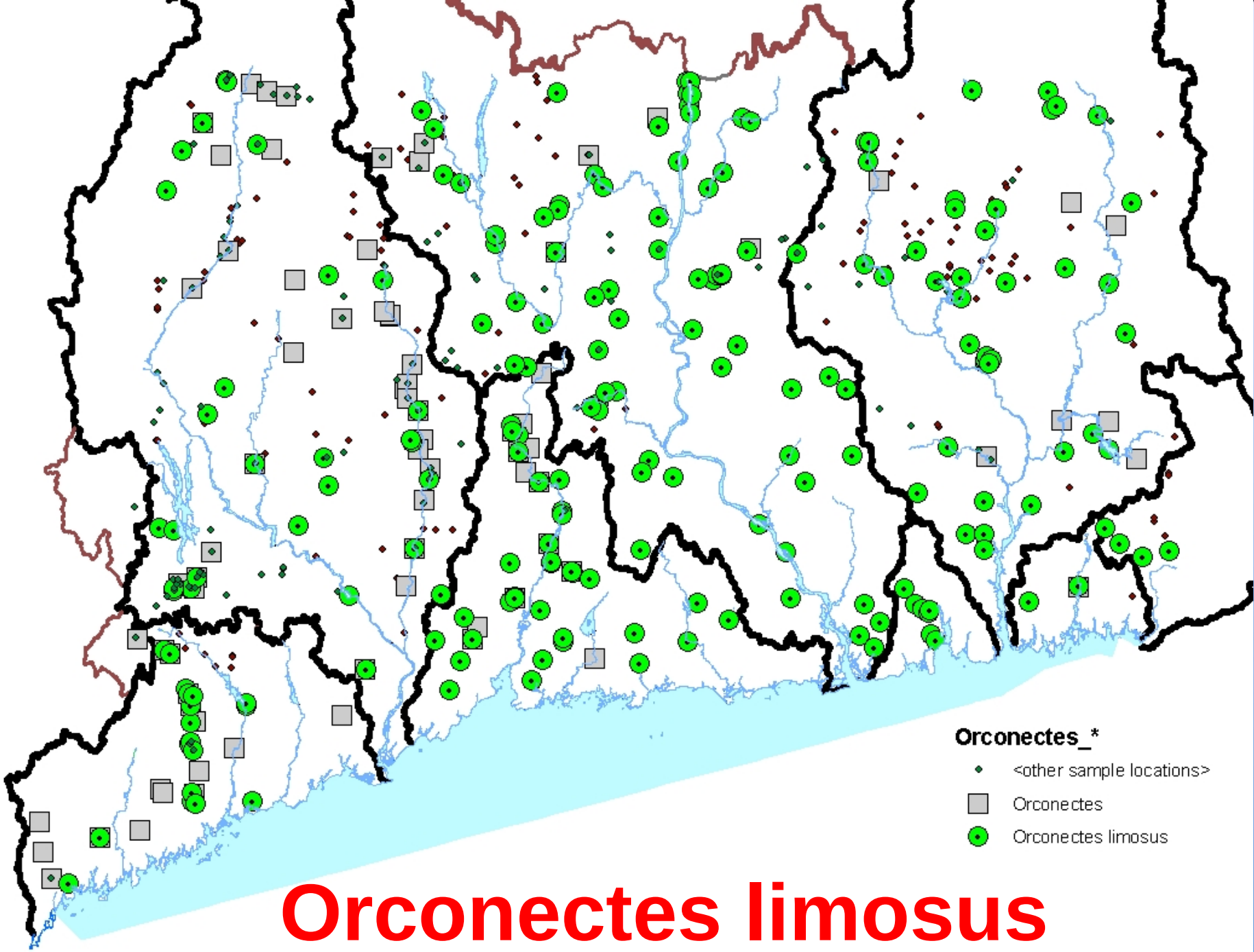

Cambaridae_*
other sample locations
name
Cambaridae
Cambarus
Cambarus bartonii
Cambarus robustus

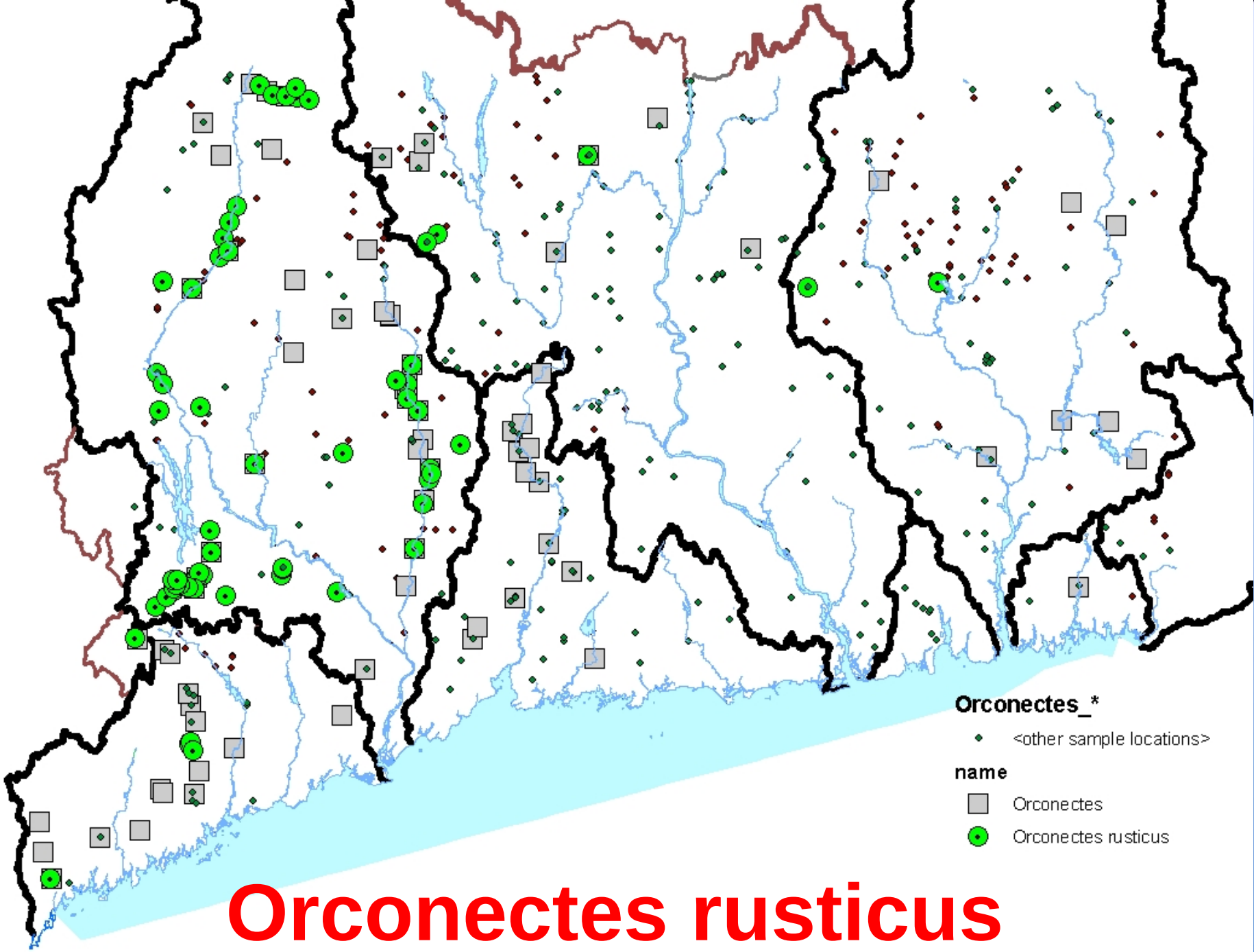
Orconectes limosus





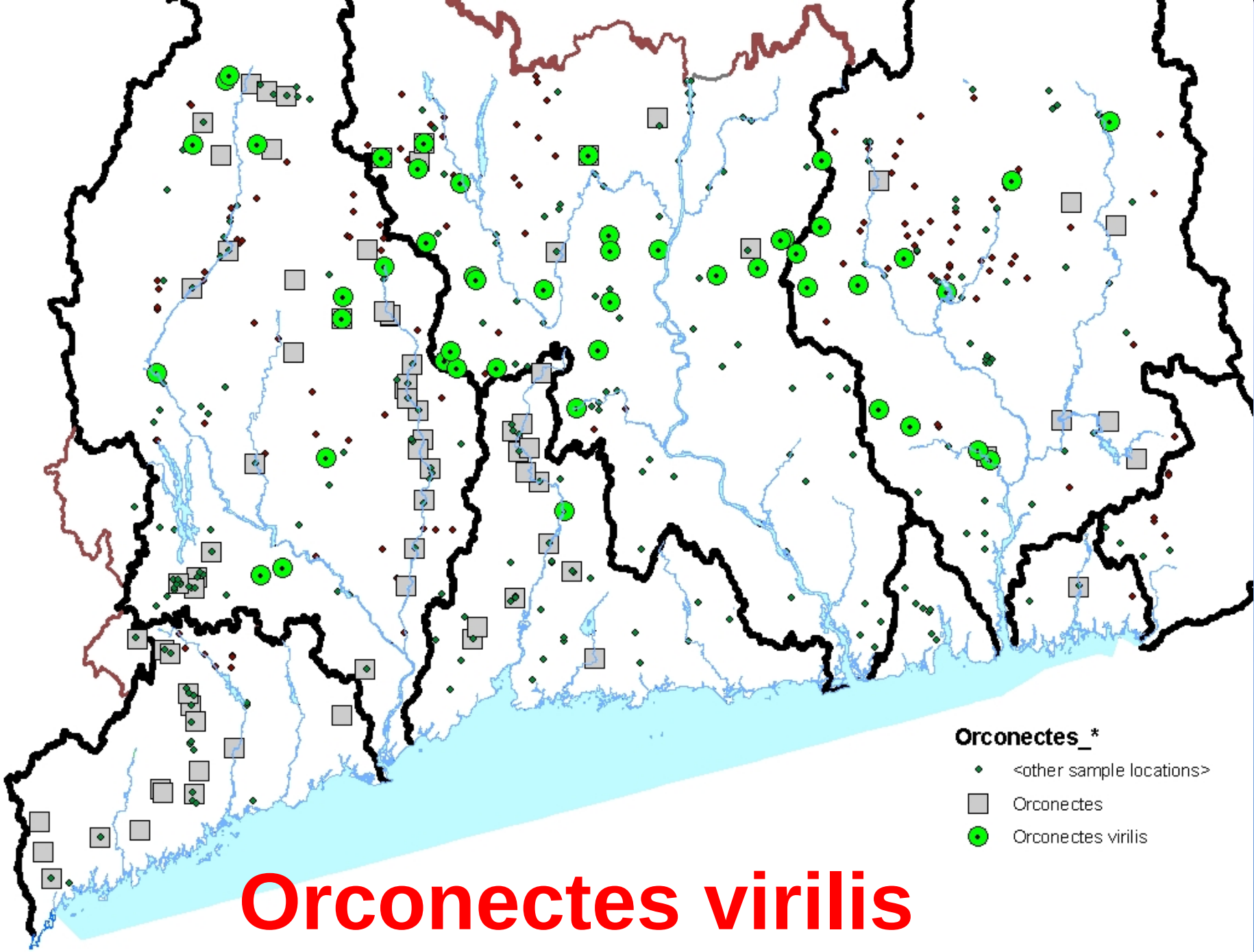
Orconectes limosus

Orconectes rusticus



Orconectes rusticus

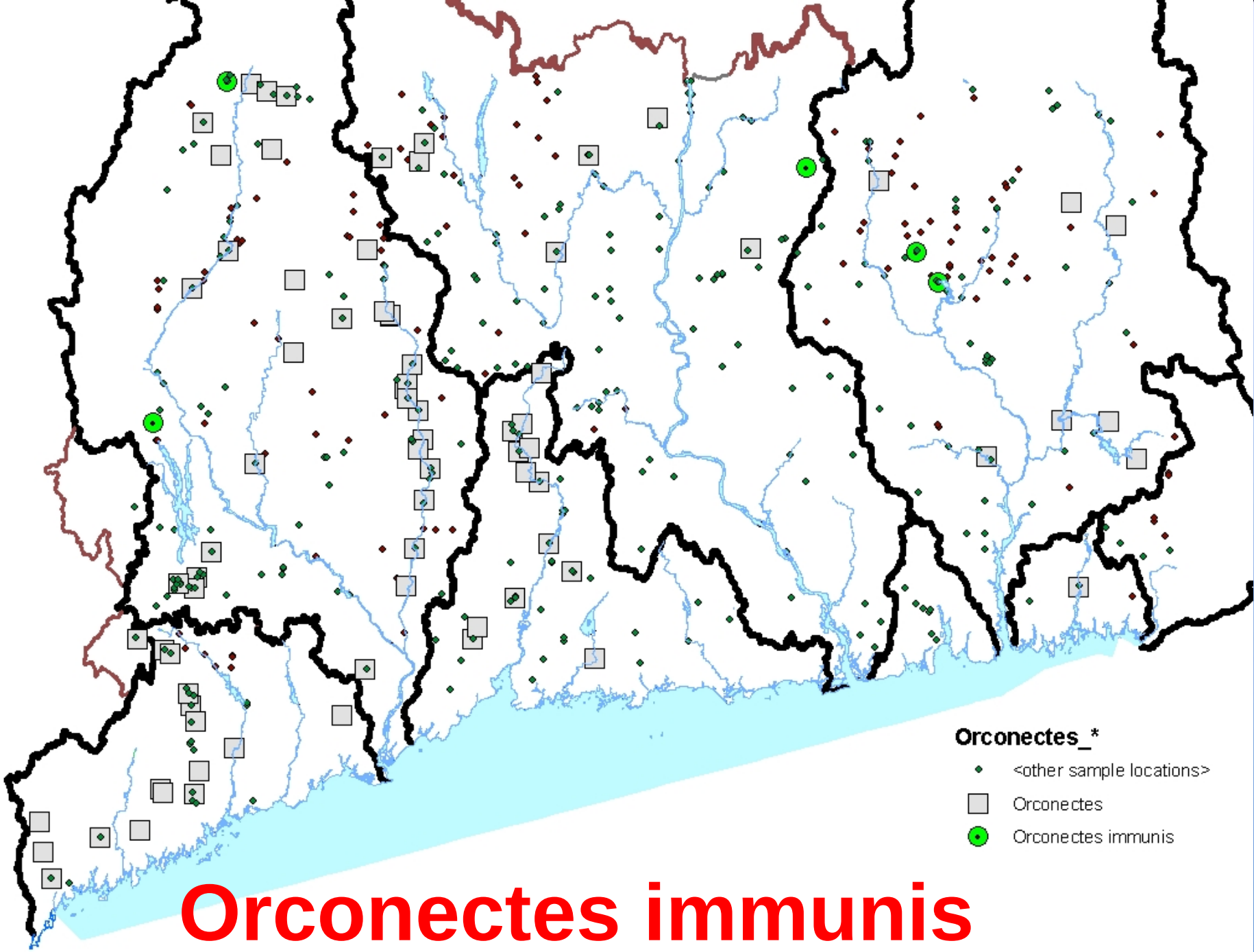
Orconectes virilis



Orconectes virilis

Orconectes immunis

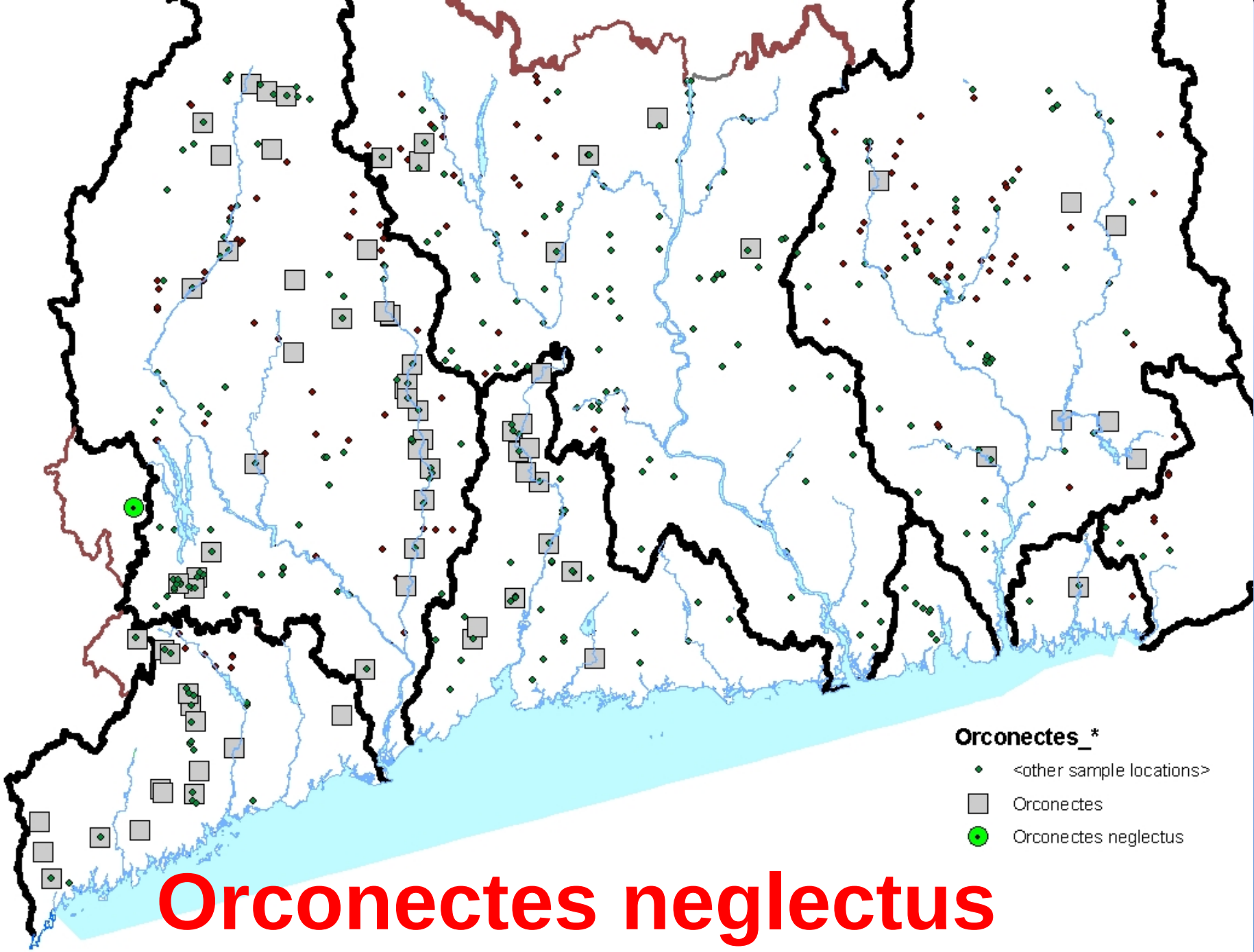
R Ja



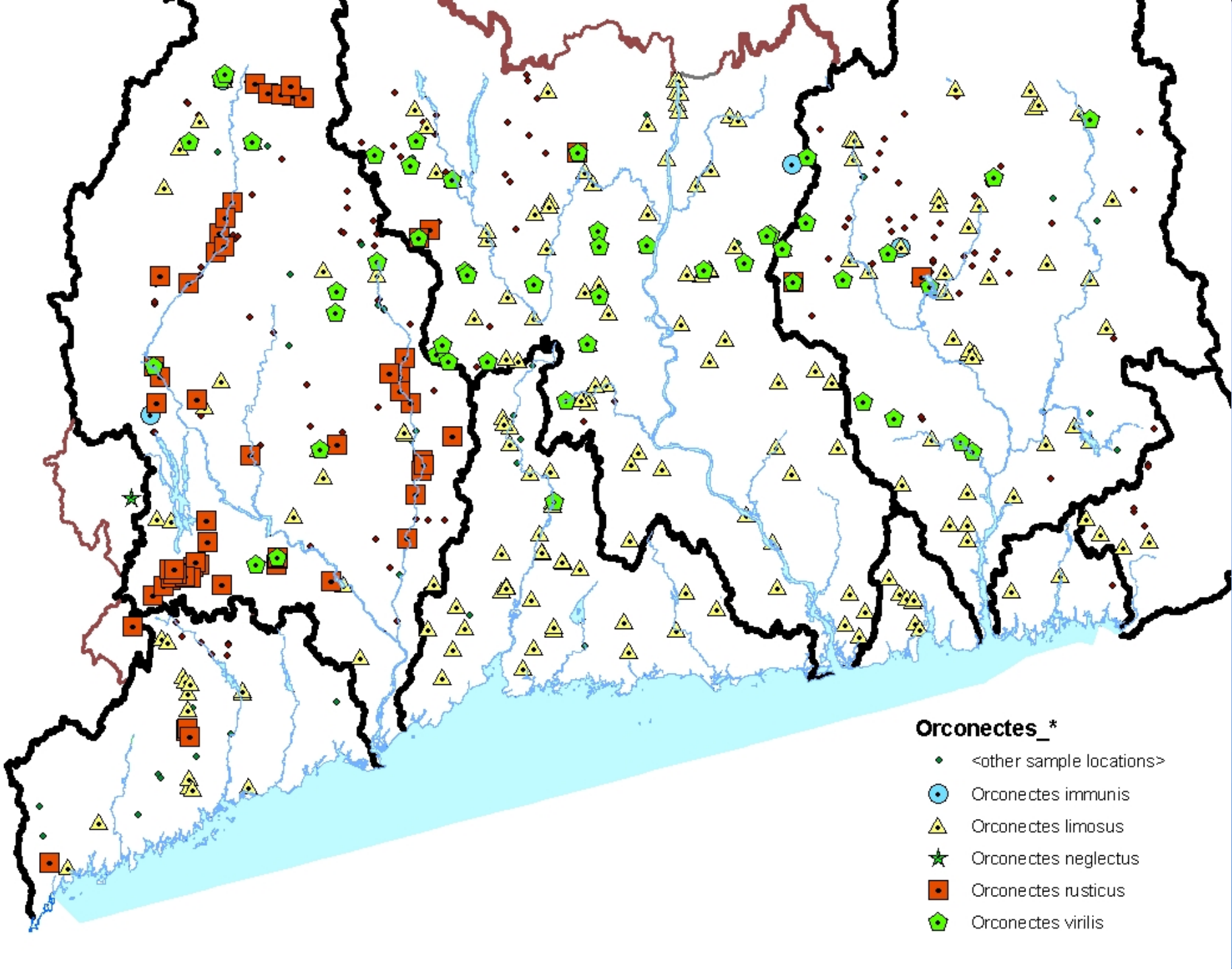
Orconectes immunis

Orconectes neglectus

R Jacobs

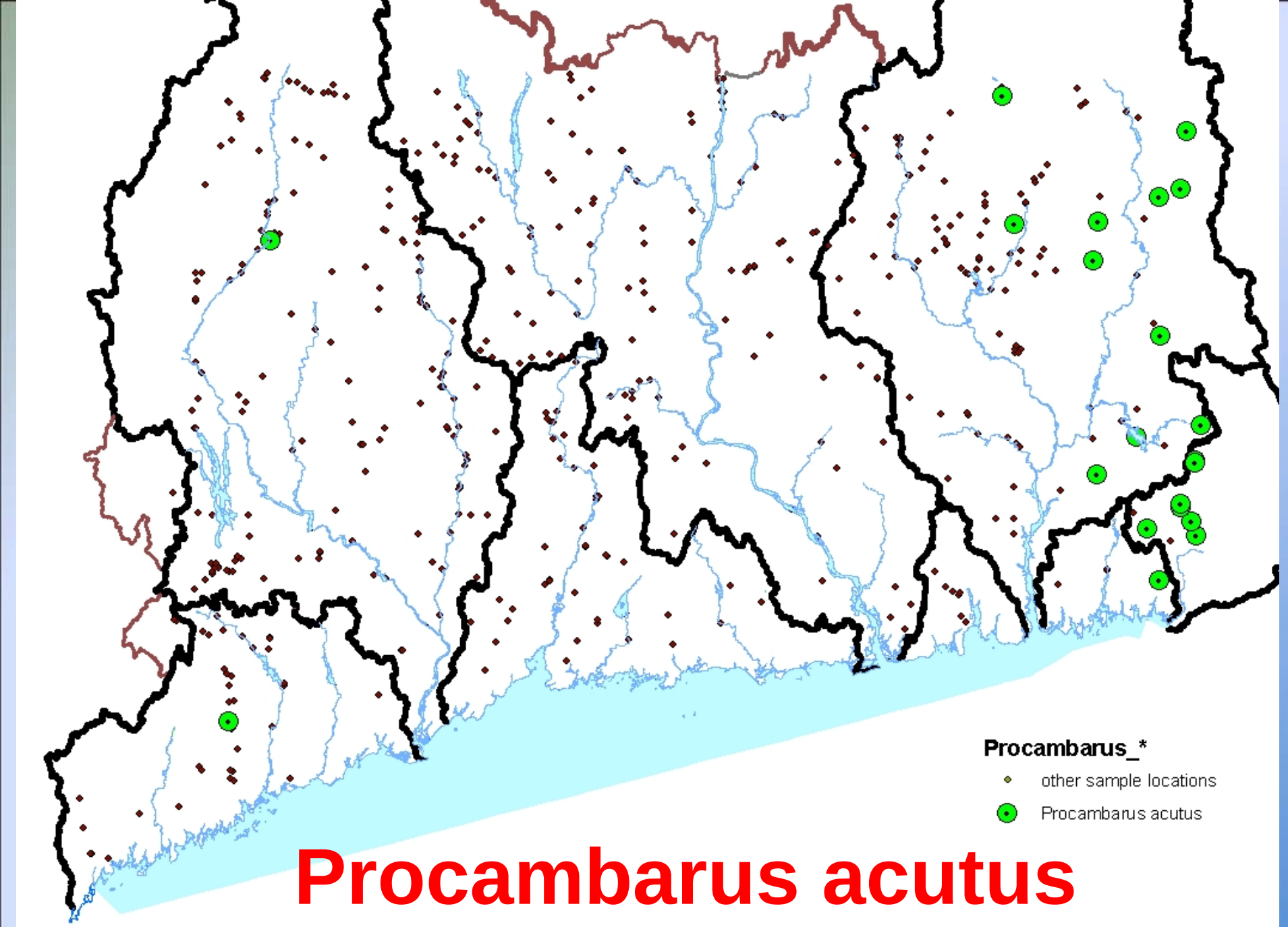


Orconectes neglectus

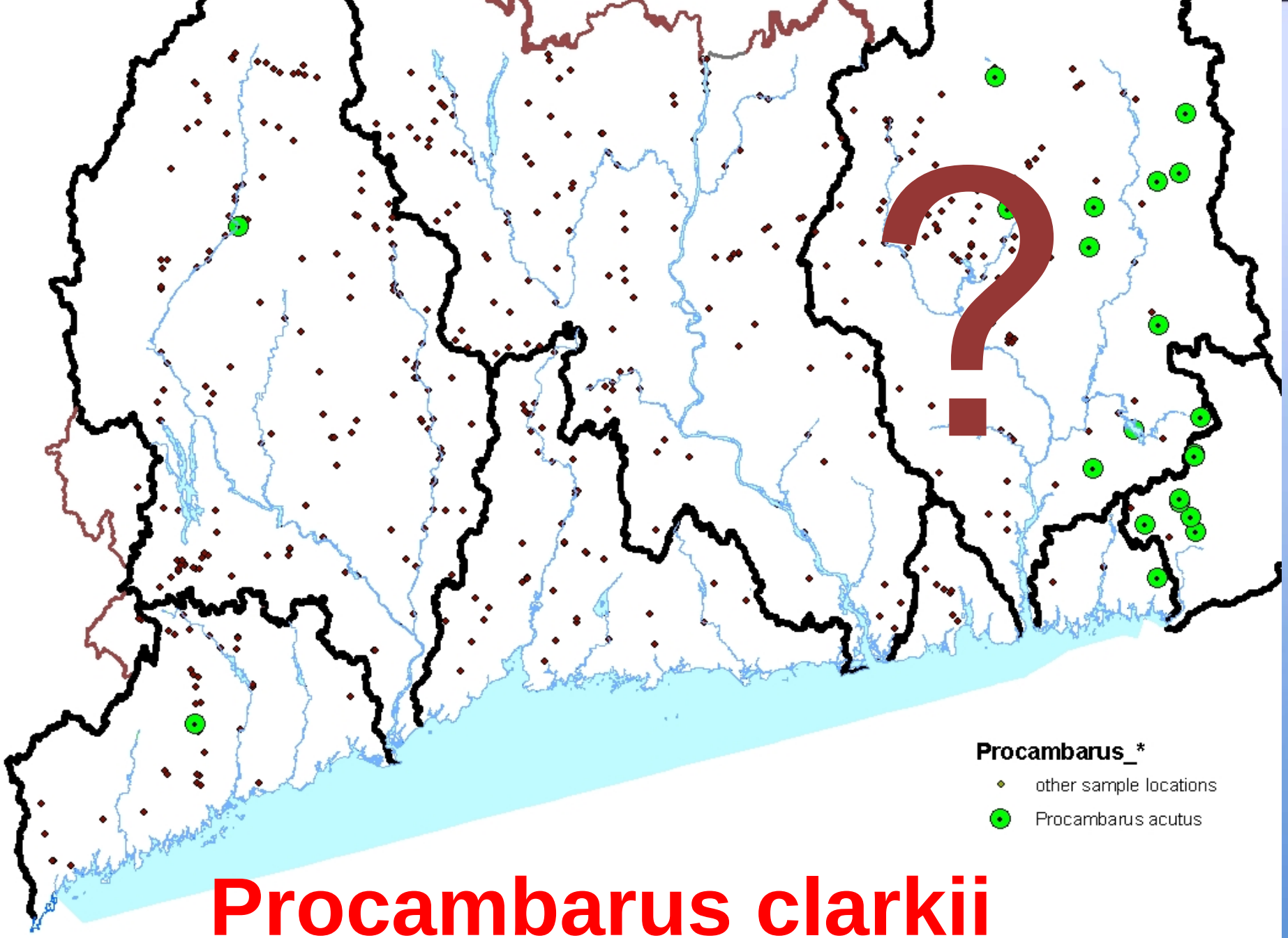

Orconectes_*
<other sample locations>
Orconectes immunis
Orconectes limosus
Orconectes neglectus
Orconectes rusticus
Orconectes virilis

Procambarus acutus

R Jacobs



Procambarus acutus



Procambarus clarkii

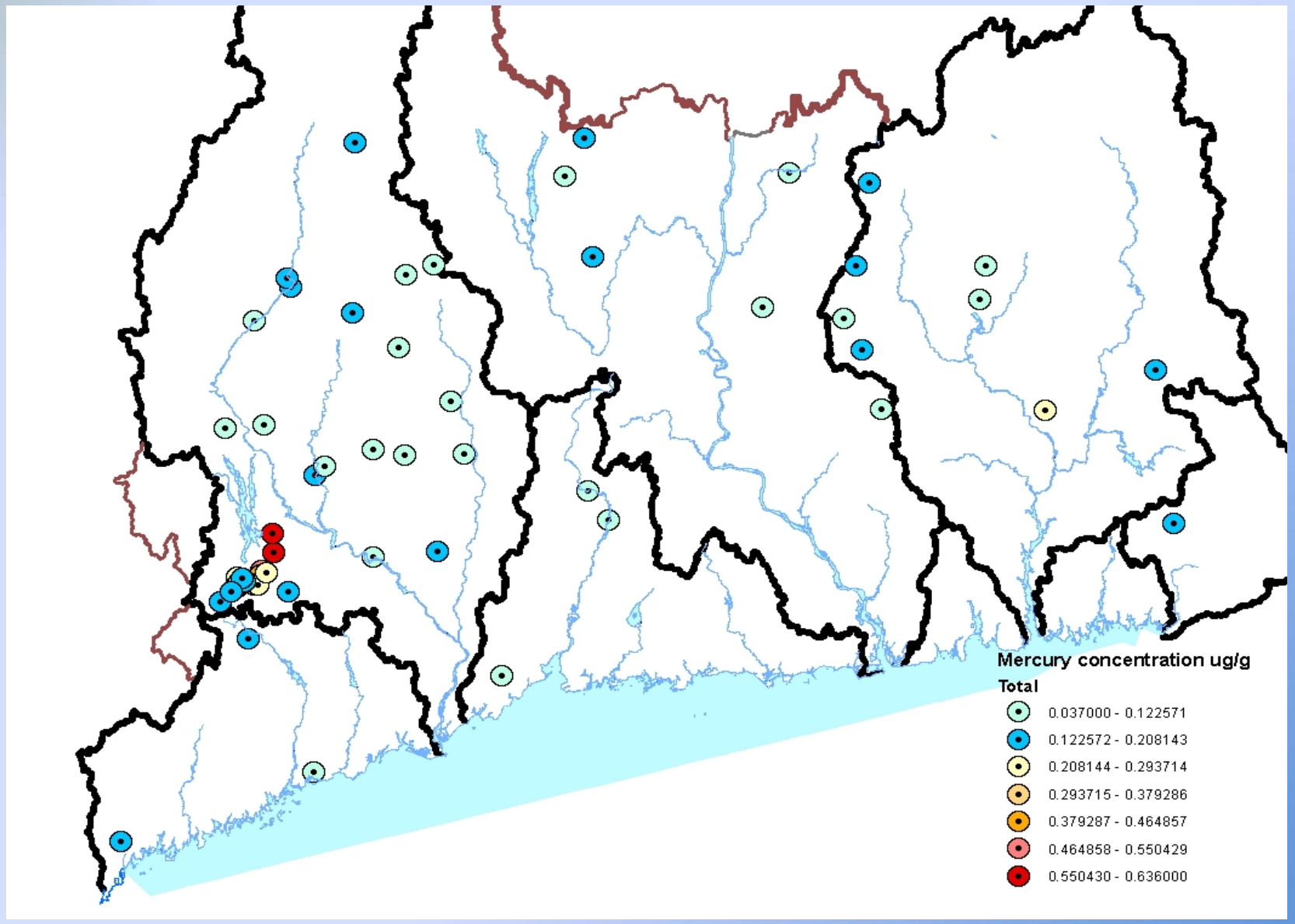
Mercury Pilot

- **Probabilistic Monitoring**
  - **Relative indicator of bioavailable mercury**
  - **Crayfish as a surrogate for fish**
  - **15 medium-large specimens at each location**
  - **3 replicates of 5 each grouped largest to smallest**
- **Targeted monitoring**
  - **Danbury, CT "Hatting capital of the World'**
  - **If there is Hg in the ecosystem should be observable here**
  - **Initial screening of a few sites winter 2006**
  - **Intensive survey summer 2008**

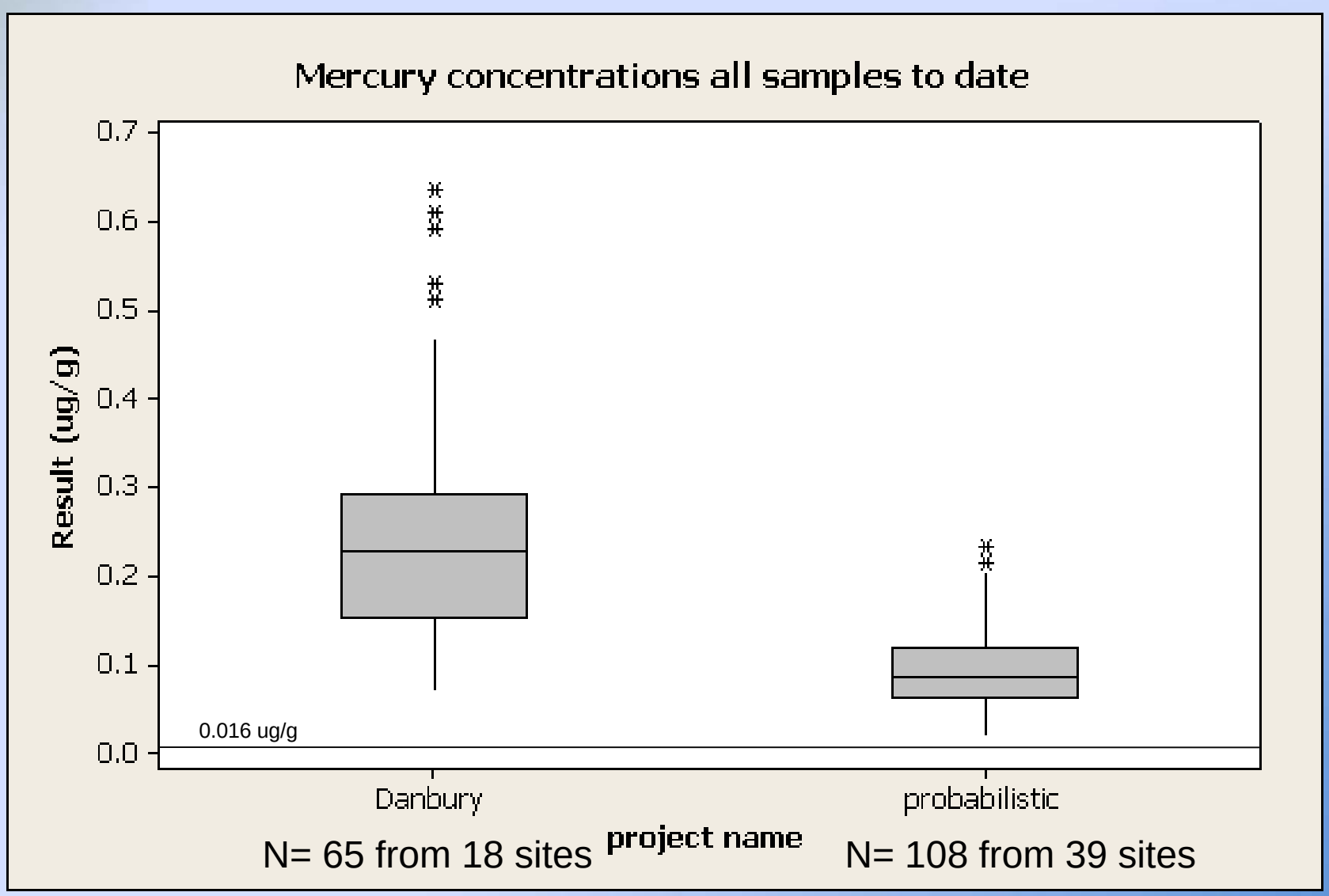
FYI

- **Hatchery Trout used as blank = 0.016 ug/g**
- **3 locations double the critters (2 sets of 30)**
  - **RPD (7%-88%) mean = 30%**
  - **Coefficient of Variance = (54.5/55.2)**
  - **Paired T-test = (p=0.07)**
- **108 samples from 39 sites (probabilistic)**
  - **40 more to go to finish statewide coverage**
- **65 samples from 18 sites (Danbury)**

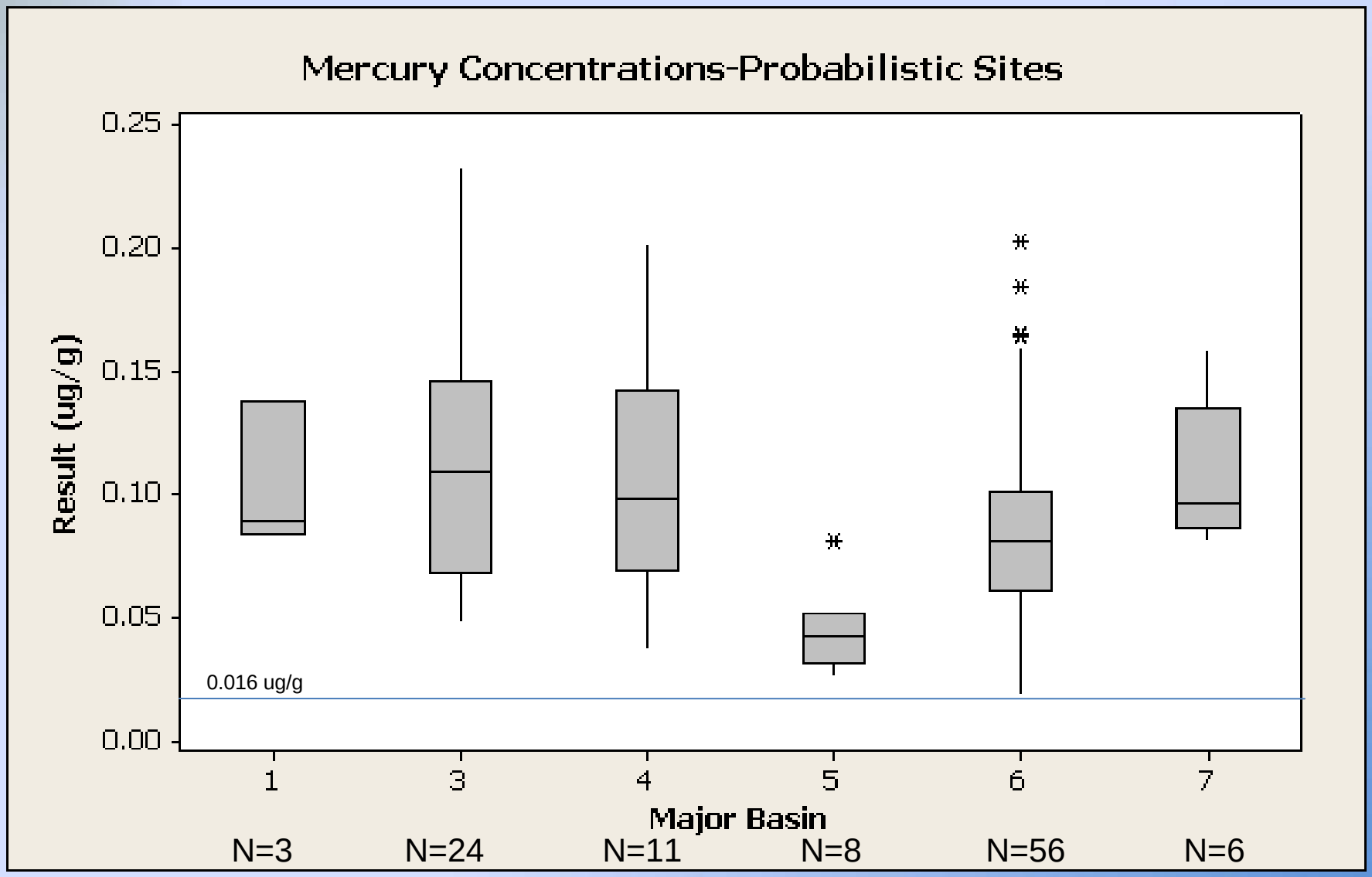
Hg @ all sites to date



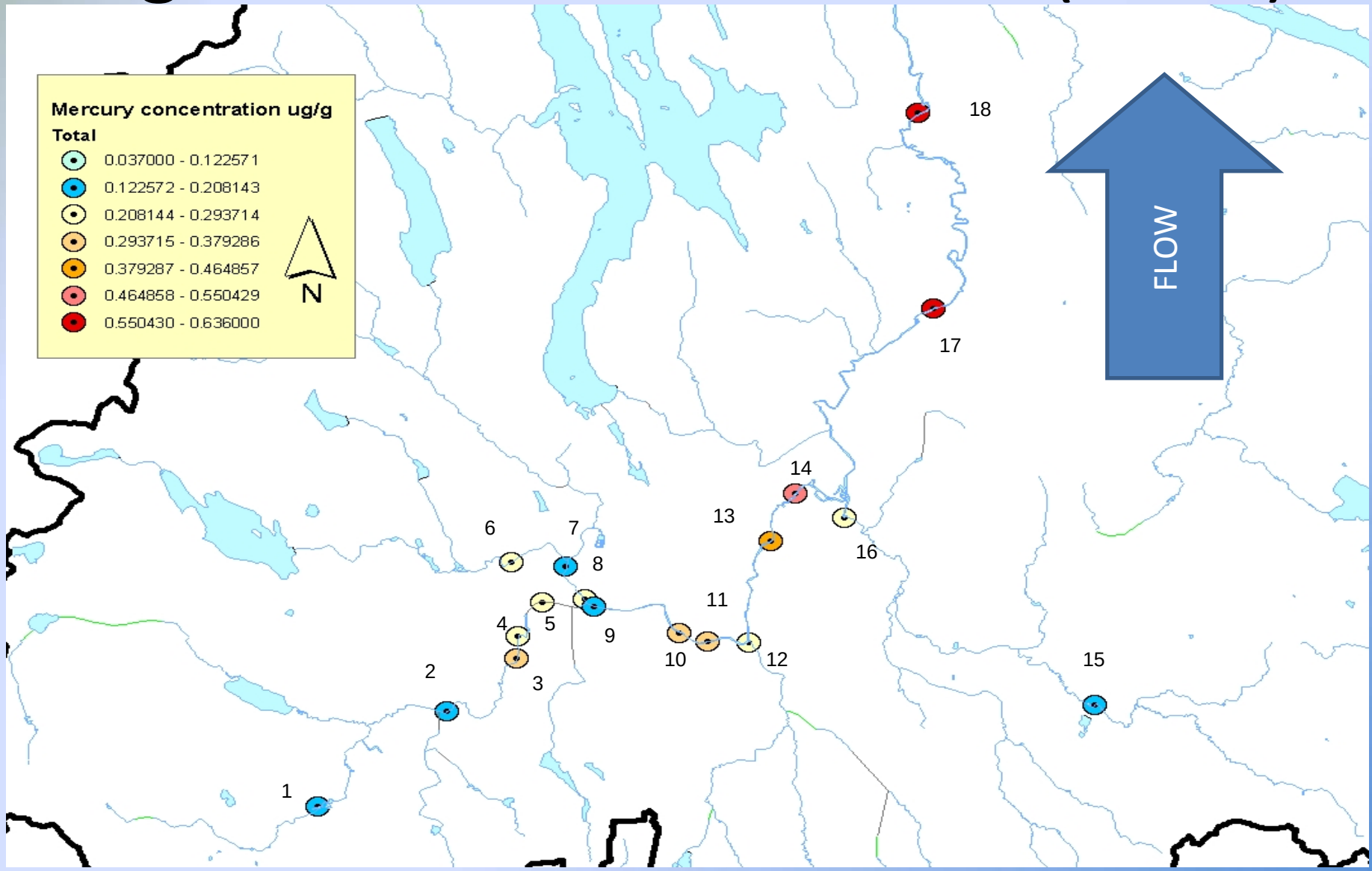
Results compared Statewide



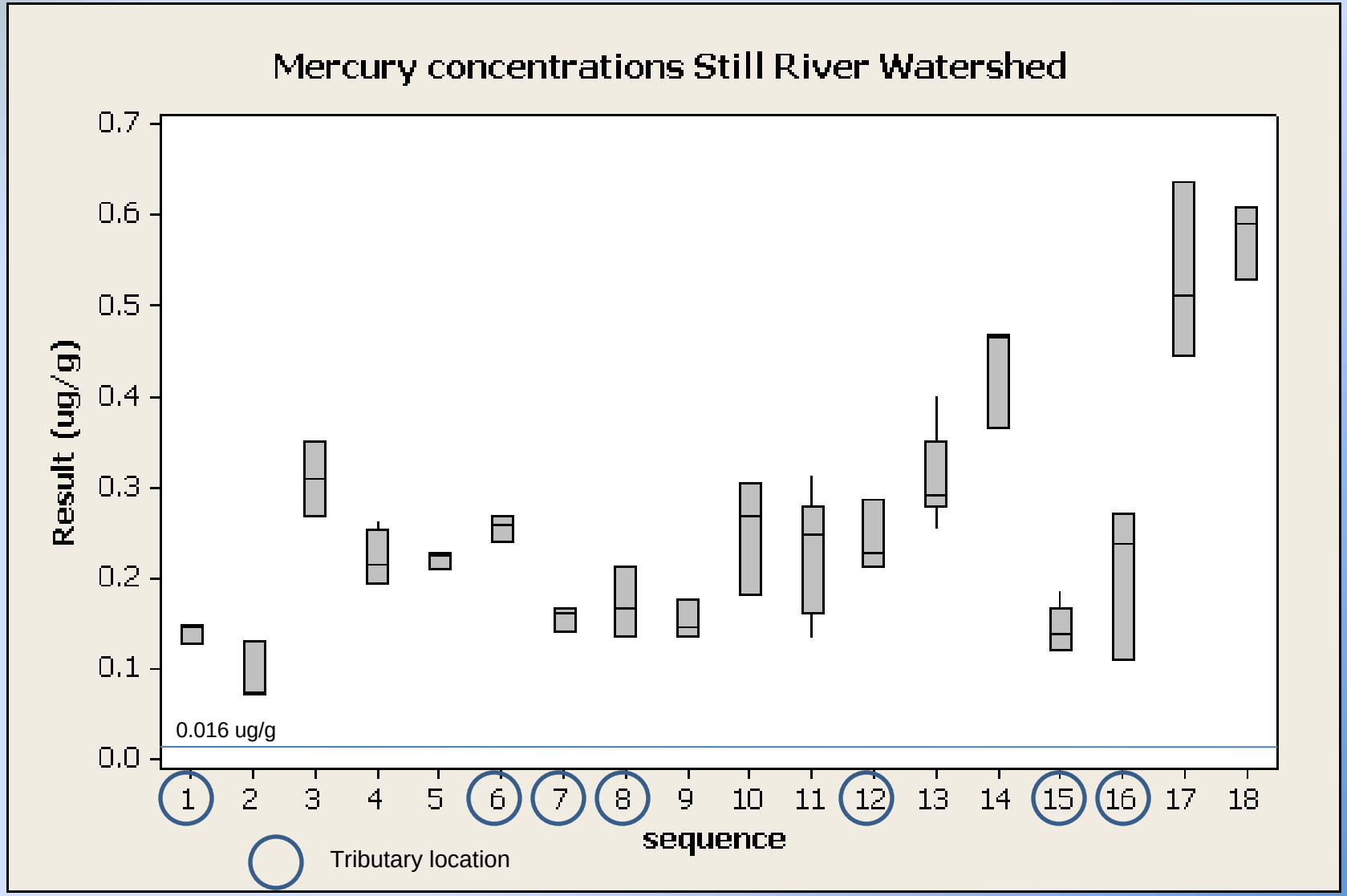
Hg @ probabilistic sites (N=39)



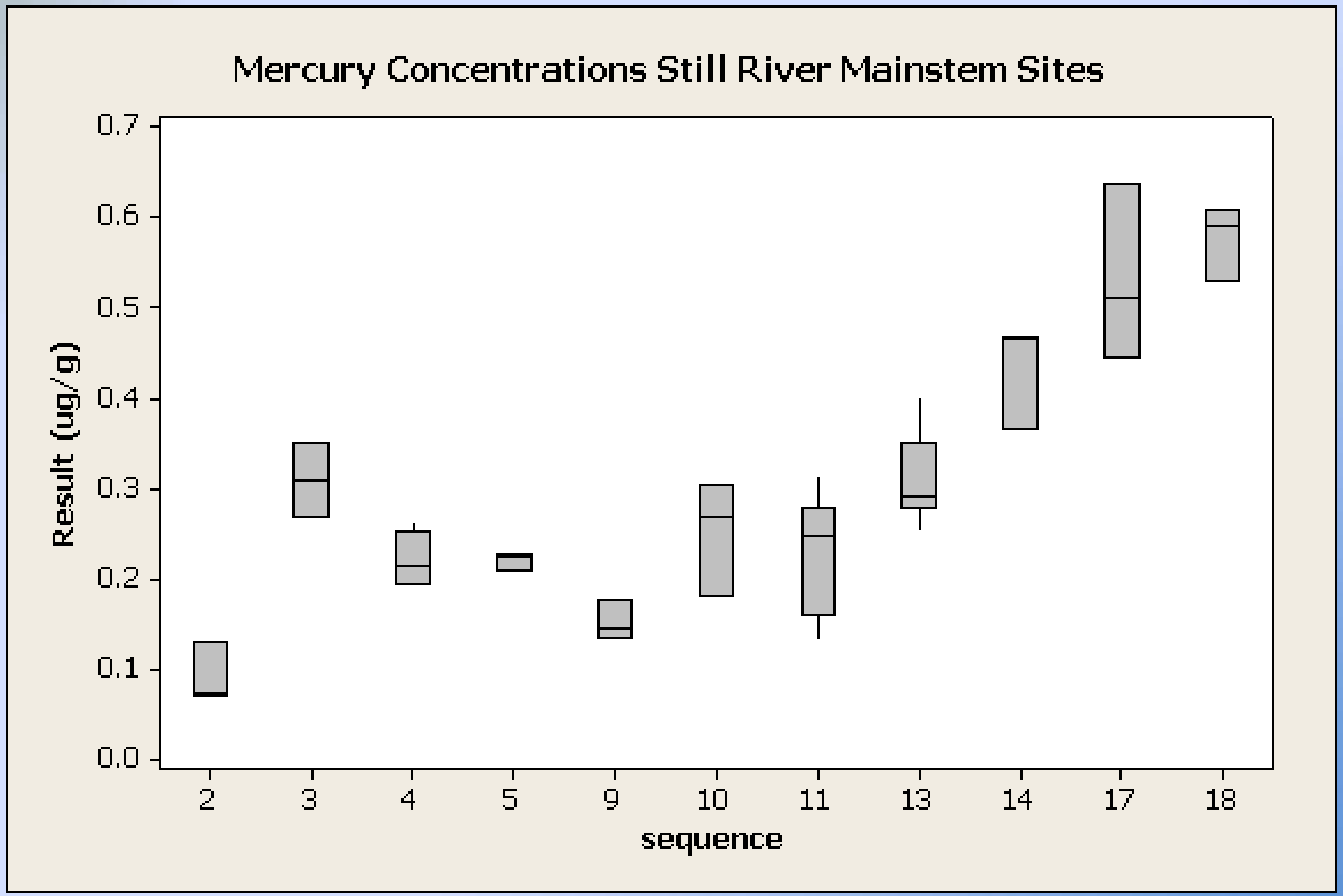
Hg @ Still River Basin Sites (N=18)

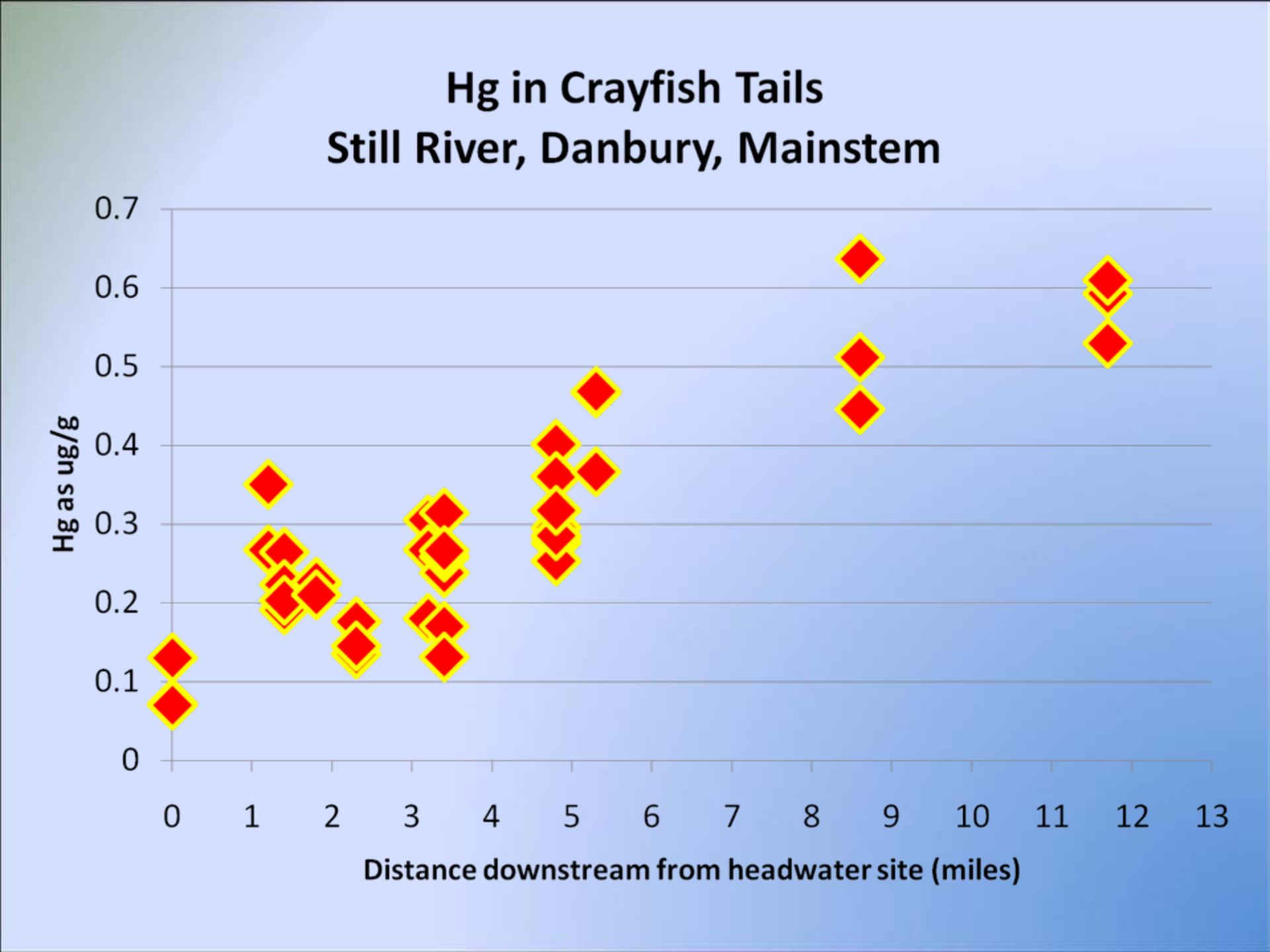


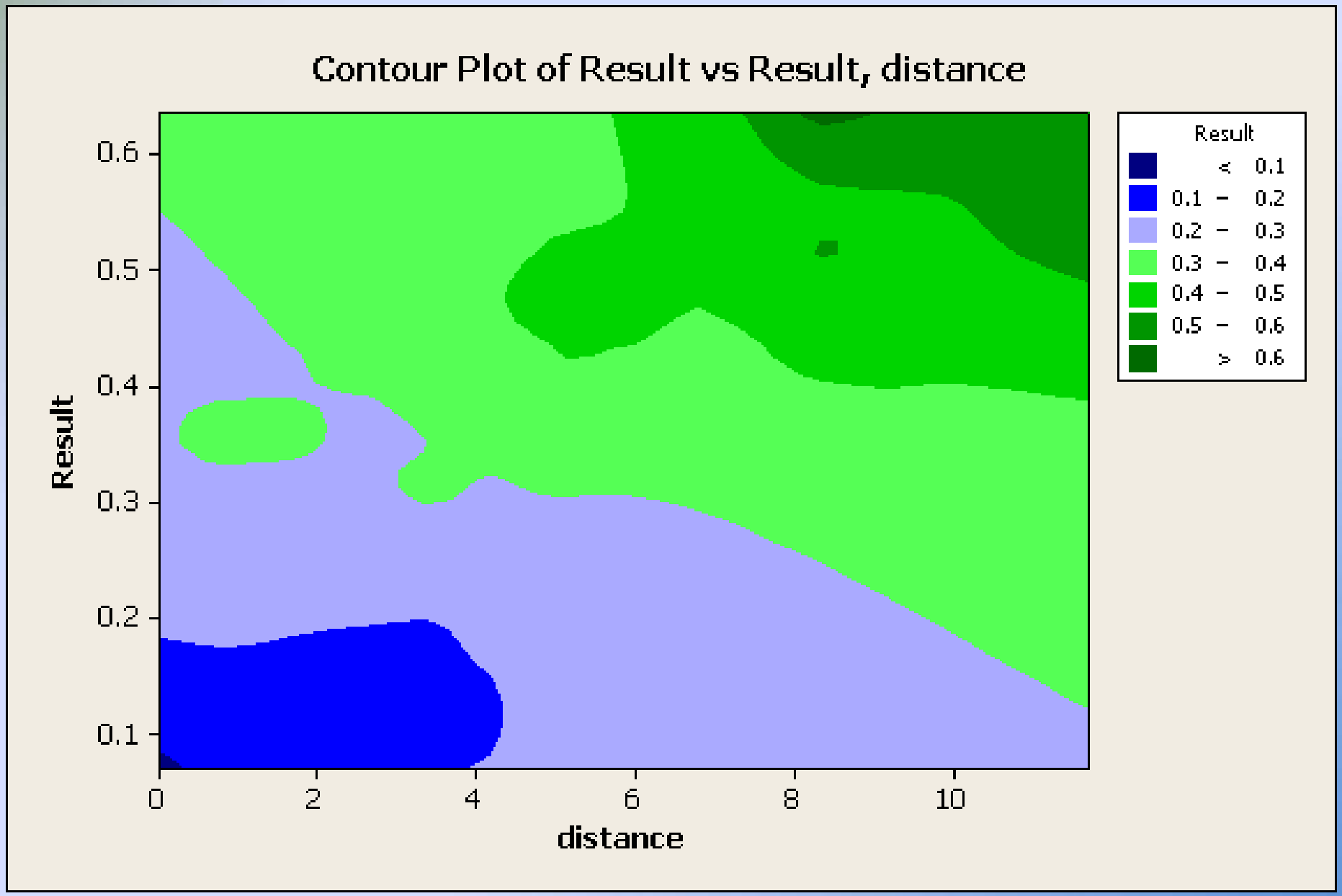
Hg @ Still River Basin Sites



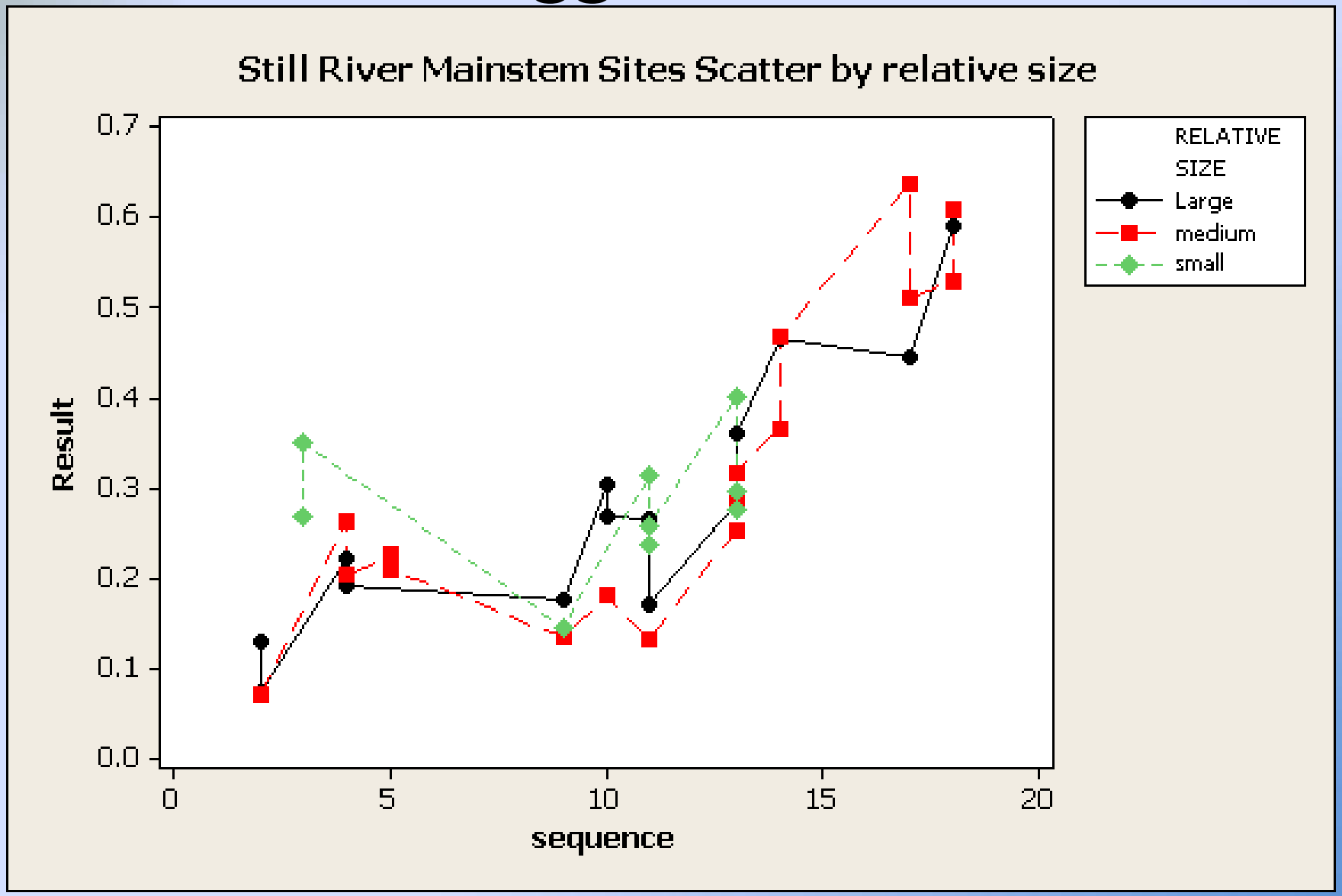
Hg @ Still River Mainstem Sites




Hg in Crayfish Tails
Still River, Danbury, Mainstem
Hg as ug/g
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
1
2
3
4
5
6
7
8
9
10
11
12
13
Distance downstream from headwater site (miles)


Contour Plot of Result vs Result, distance
Result
0.6
0.5
0.4
0.3
0.2
0.1
0
2
4
6
8
10
distance
Result
< 0.1
0.1 – 0.2
0.2 – 0.3
0.3 – 0.4
0.4 – 0.5
0.5 – 0.6
> 0.6

Are the bigger ones worse?



Free to take home

- **We found a few species often…**
- **We found a few species rarely….**
- **Not as difficult as some other taxonomy….**
- **Are the rarely found ones are rare because they taste better?**
- **Don’t eat the crayfish from the Still River in Danbury! In fact don’t go near Danbury!**
- **You don’t always know what you don’t know and still don’t know…..**


Feel free to use this image, however, please credit Jeff Gunderson, Minnesota Sea Grant.