Measuring the fate and effects of mercury contamination on birds in the South River watershed, Virginia

A premature progress report

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Objectives:

- **Compare reproductive success and health of birds in contaminated and less contaminated areas**
- **Determine level of mercury in feathers and blood**
- **Generate baseline diversity data**

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Belted Kingfisher
Year 1 feasibility study

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Tree swallow
Y1: 250 boxes

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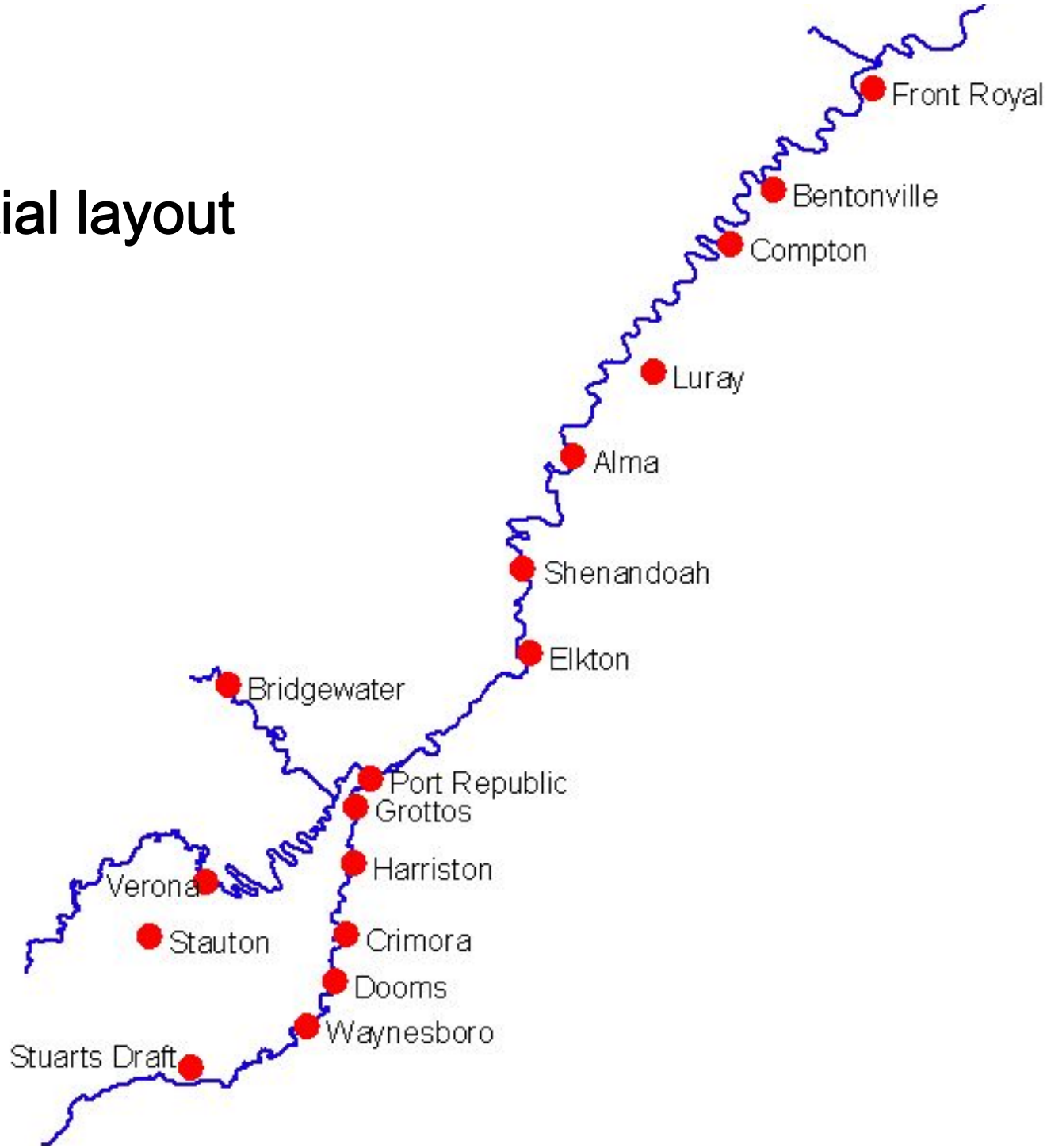
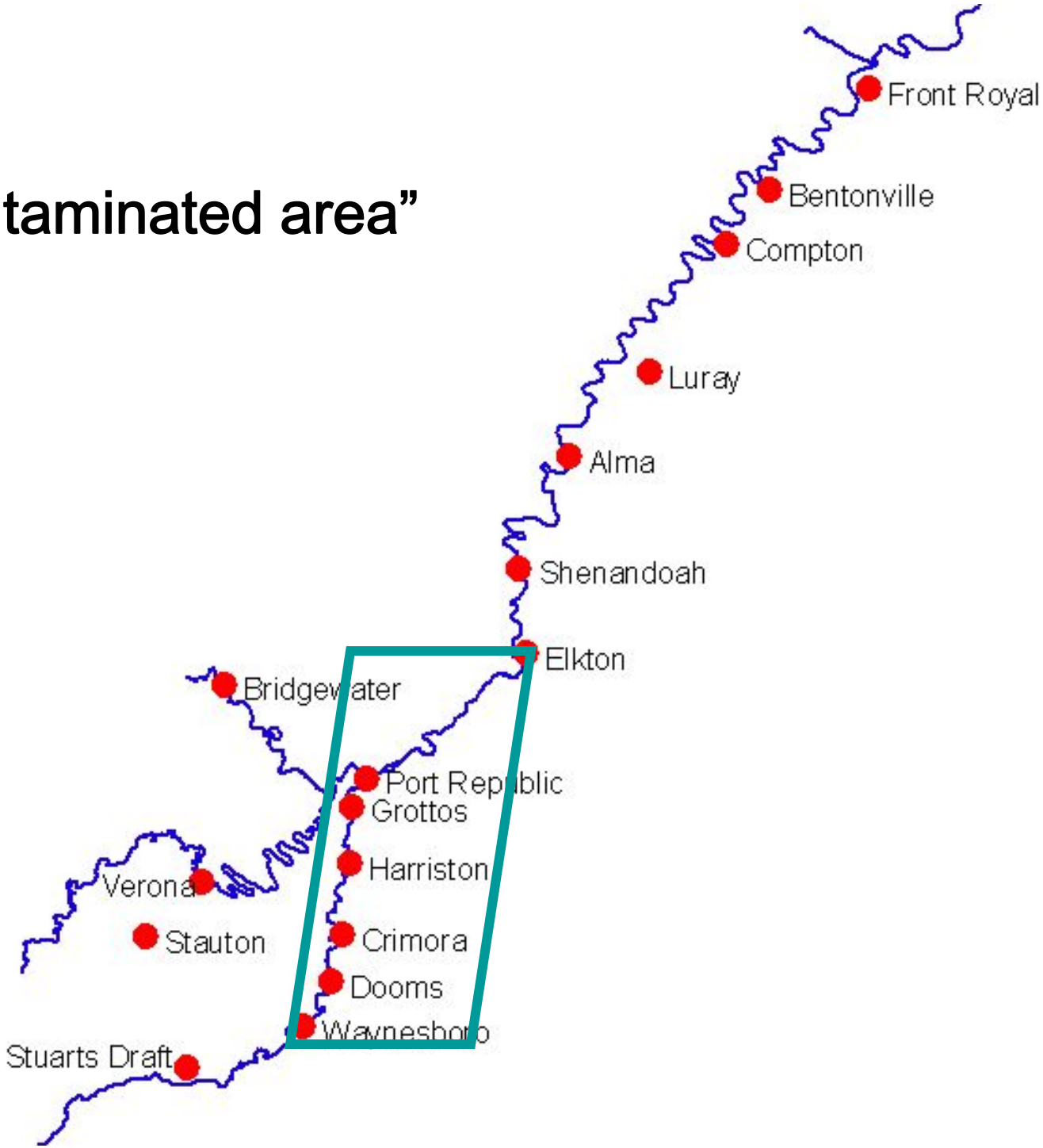
Louisiana Waterthrush
Song Sparrow
Green heron
Waterfowl?
Pilot samples on other candidates for Hg levels, not fitness (yet)
Common Yellowthroat
Red-winged Blackbird

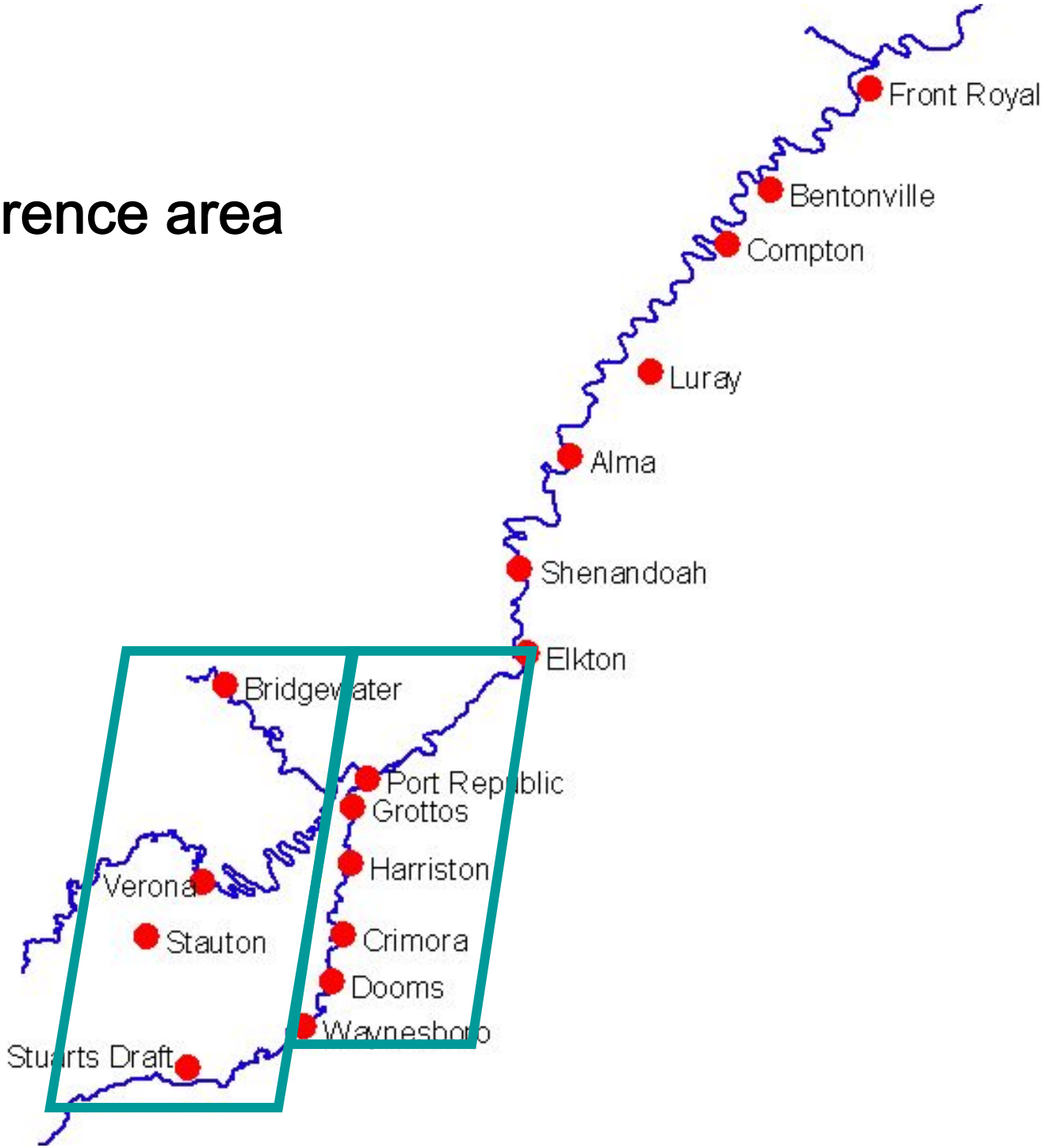
Spatial layout



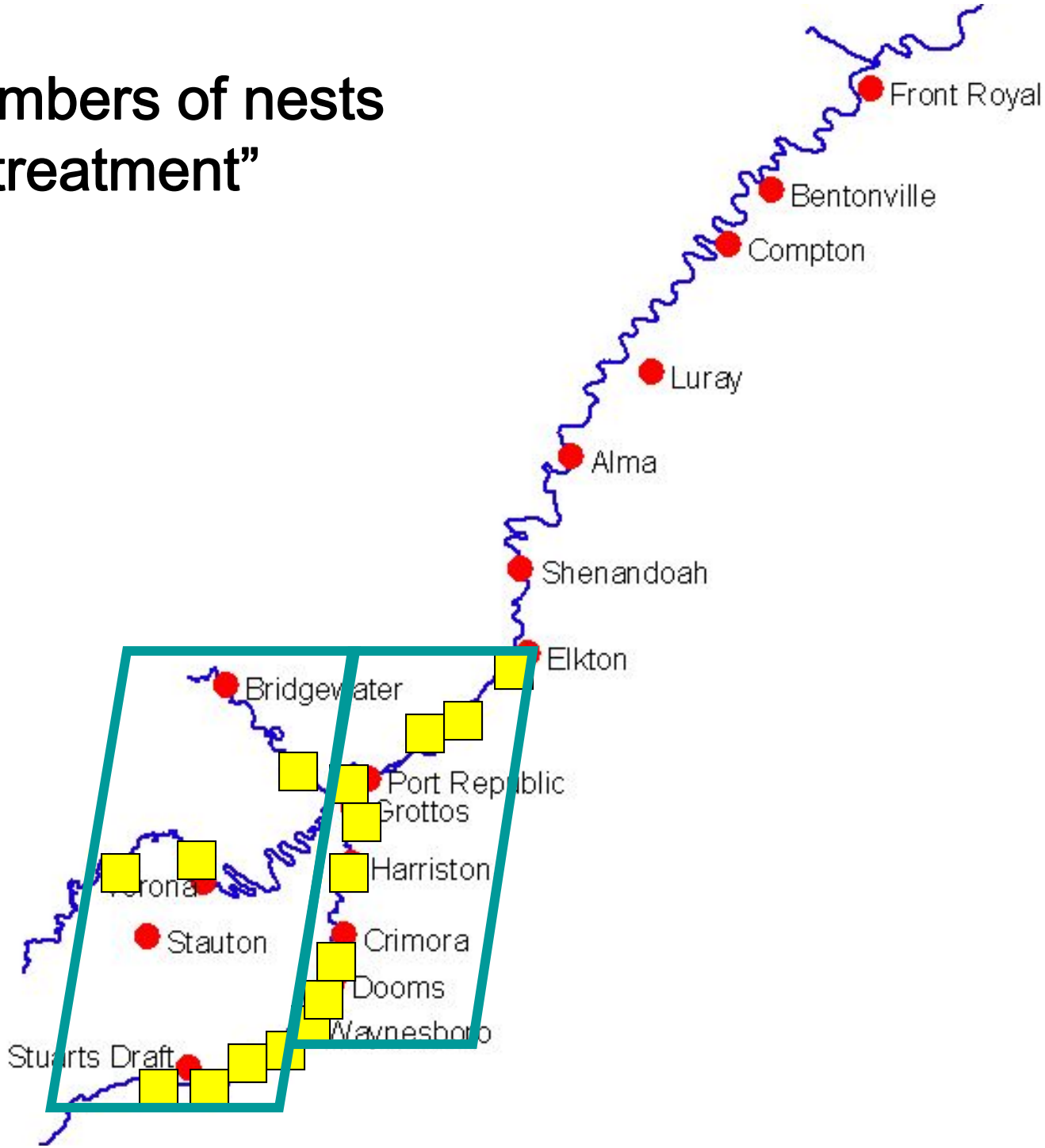
“Contaminated area”



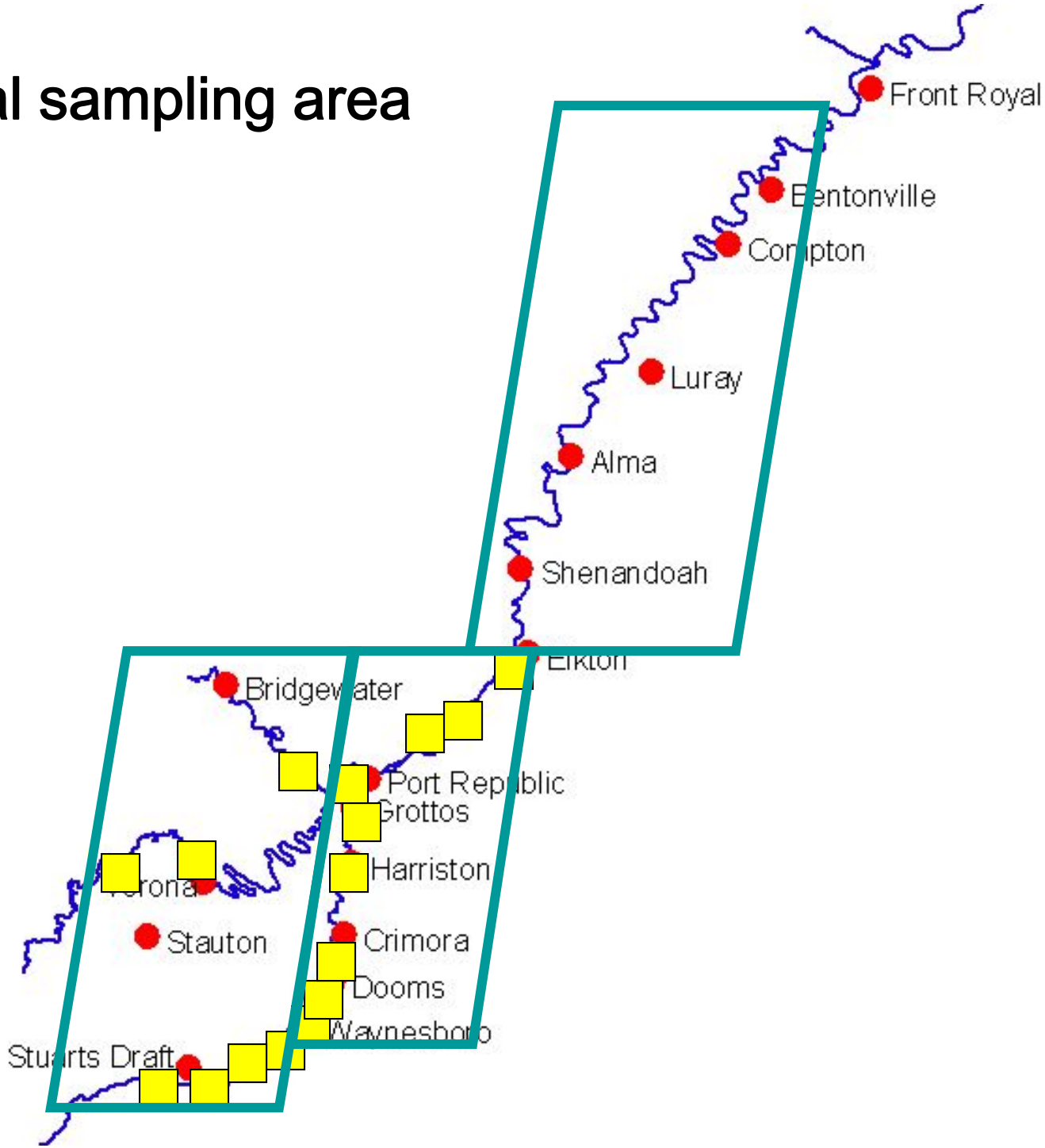
Reference area



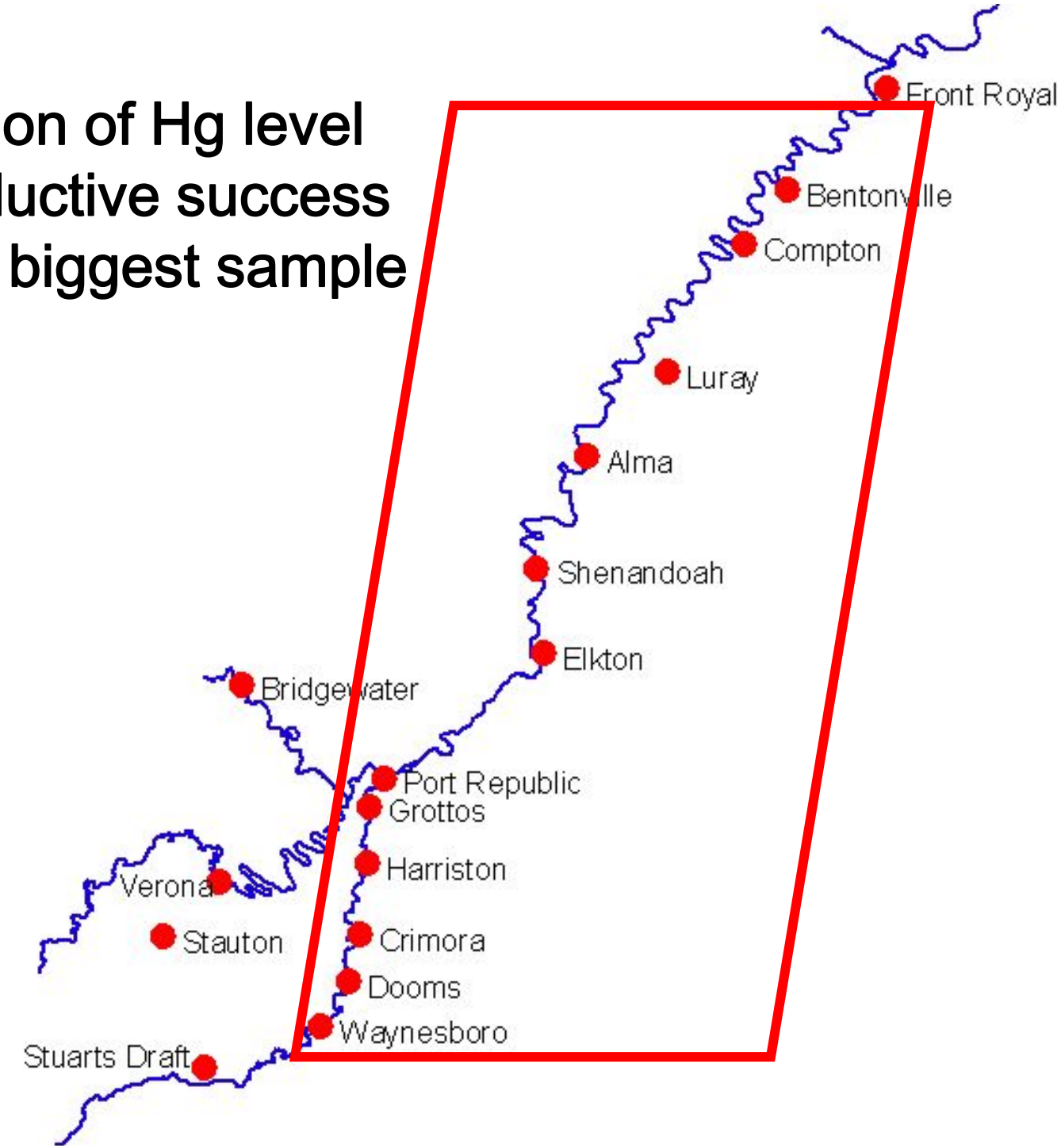
Equal numbers of nests in each “treatment”



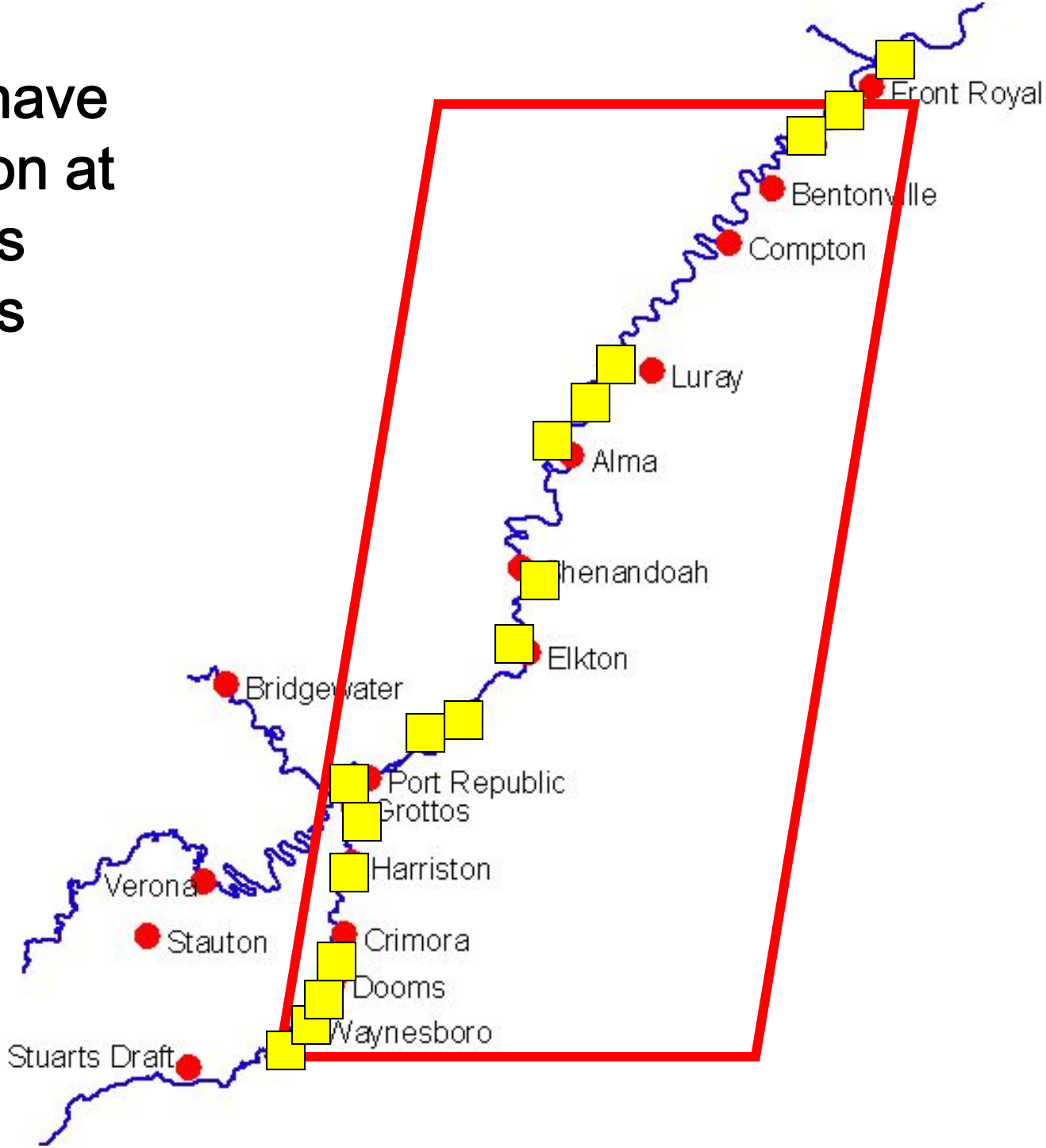
Additional sampling area



Correlation of Hg level & reproductive success requires biggest sample



Already have permission at numerous ideal sites



Plan for Year 1:

1. Erect all nestboxes by March 15

2. Do point count surveys in May

3. Monitor nests through July

4. Collect feathers and blood

Also:
1. Collect prey items
2. Assess kingfisher as target
3. Choose additional species

Bad News? Belted Kingfisher:

- Finding nests will require river floats
- May nest in distant quarries and roadcuts
- Networking with locals will be essential
- Ideal species, if sample size adequate and distributed correctly

Good News? Tree swallow:

- Landowners report more than expected
- Disturbed habitat favors this species
- Recently recognized as a new model species for toxicology, as well as a lot of other things

Wild Card – Eastern Screech-owl:

- Eats strictly terrestrial large insects and rodents
- Very adaptable to rural or urban settings
- Small home range, high densities
- Good bioassay for floodplain soil bioaccumulation

REWARD!!!!!

Keep an eye out for these.

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