

Monitoring Water Quality in Impaired Watersheds

Bayou Bartholomew, Lake Conway Point
Remove, Lower Ouachita-Smackover, and
L'Anguille

Presented by:

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Acknowledgements and Special Thanks

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- ANRC; Tony Ramick and Robbie Alberson
- Wesley Griffin
- Ouachita Baptist University
- Dr. Tim Knight
- Clark Kyper
- Dr. Joe Nix
- Ecological Design Group
- HDR, Inc.
- TNC



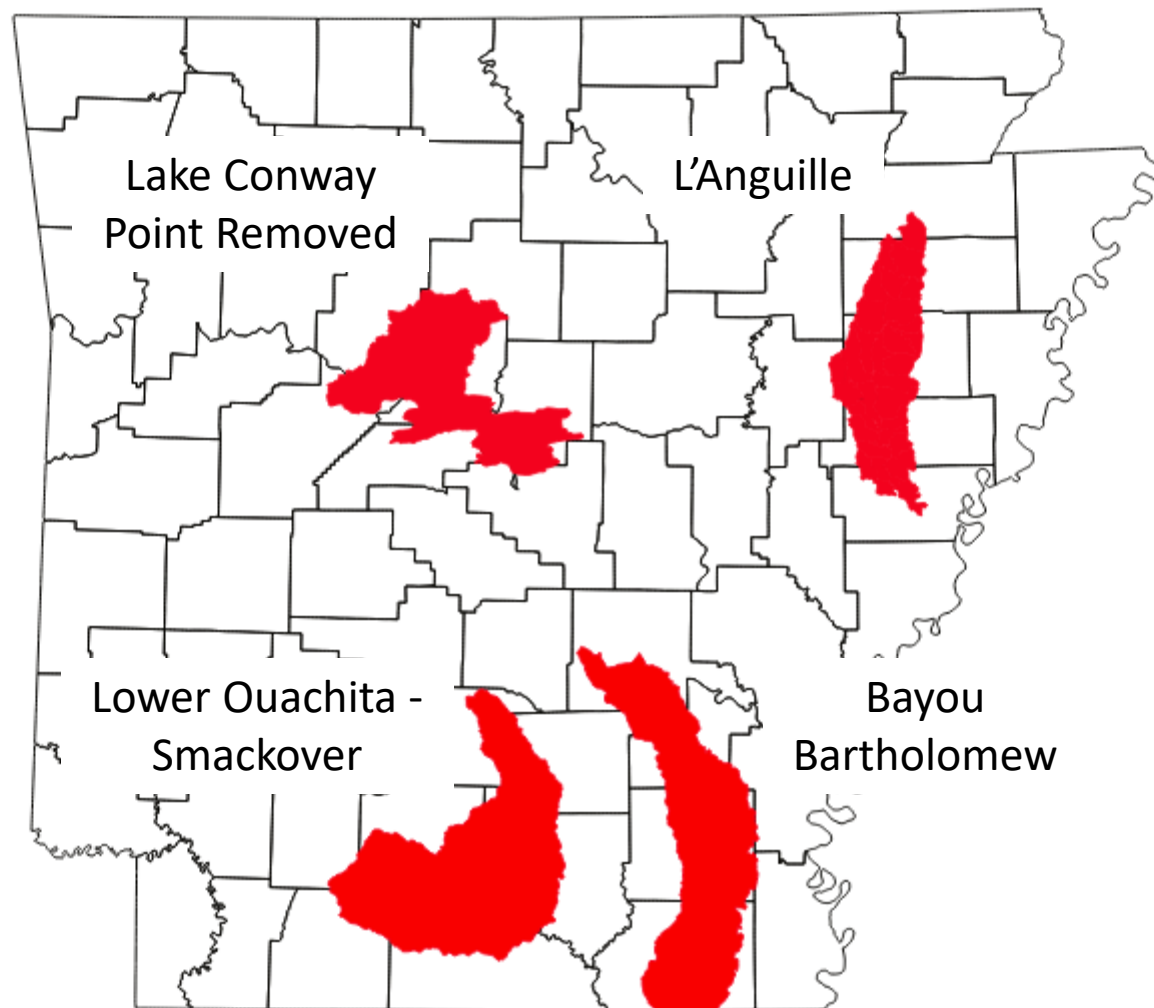
Projects' Ultimate



Provide monthly and annual
parameter loadings, as well as
unit area loadings in numerous
12 digit HUCs.

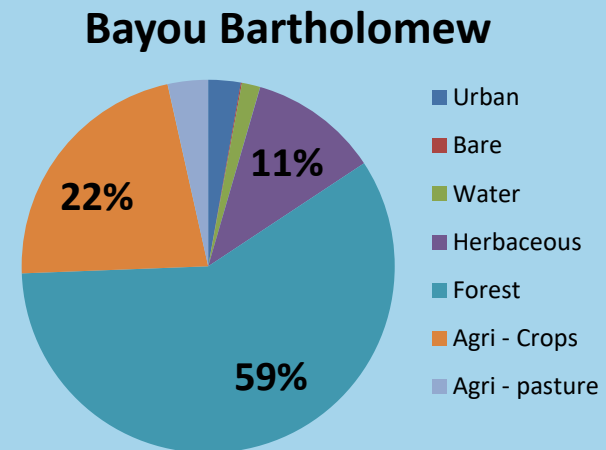
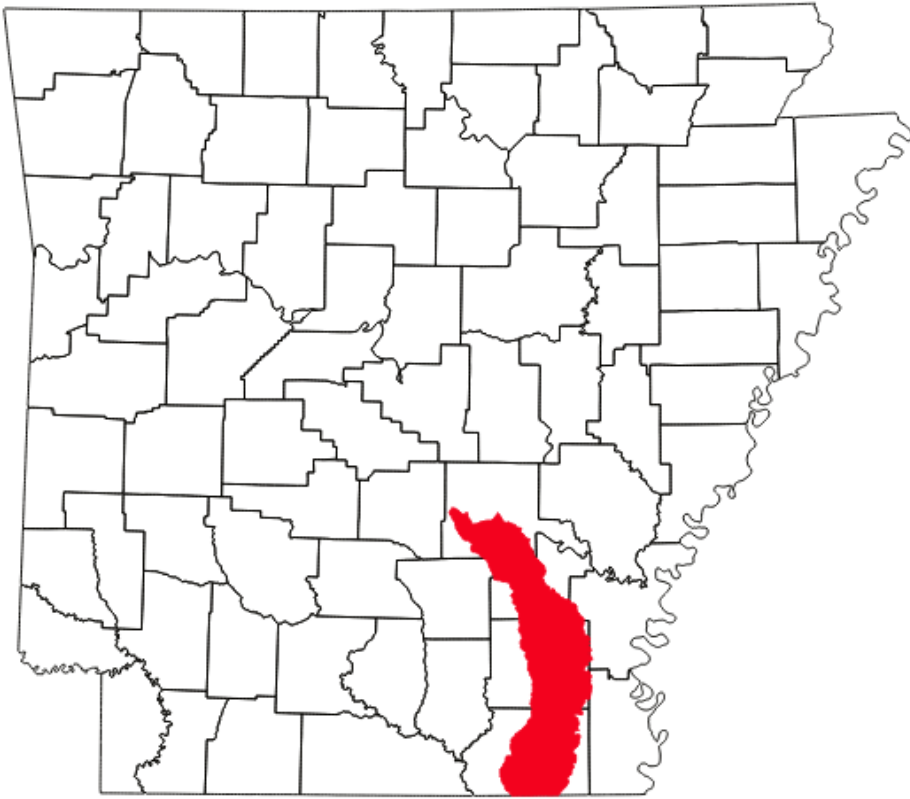
The long-term goal of the priority watershed program is to reduce pollutants to levels that will restore all designated uses.

- **Monitoring Structure** – Similar activities are implemented in each monitored watershed that support the projects' primary goal.
- **Water Quality Requirements** – Incorporates project design, collection and analytical methodologies to generate representative data and allow for an evaluation of water chemistry within the selected watersheds.
- **Discharge Requirements** – Estimate the volume of water that passes the monitoring station during the sampling period.
- **Data Compilation and Statistical Analysis** – Compile and statistically analyze the collected data to provide monthly, annual, and unit area loadings, as well as, compare results between monitoring stations.
- **Reporting Requirements** – Provide project partners with the project outcomes and make the results readily available to the natural resource professionals and to the general public.



Bayou Bartholomew Watershed

Focusing on the Cousart Bayou and Deep Bayou Sub-watersheds

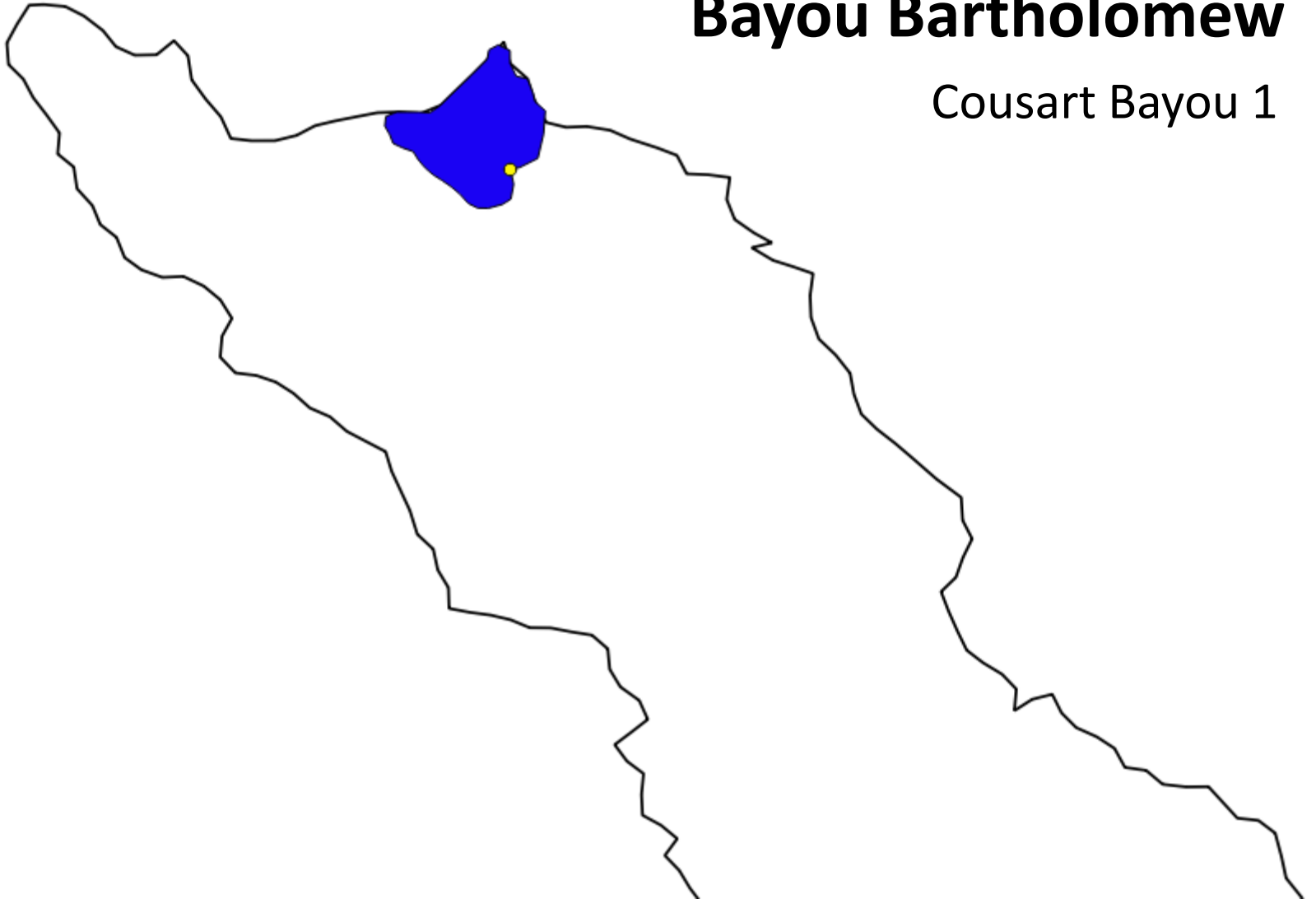


- The Bayou Bartholomew was included on the Arkansas 2014 303(d) for not supporting designated uses.
- ANRC has designated the watershed as a priority watershed.
- NRCS also identified the Bayou Bartholomew as a priority in the Mississippi River Basin Healthy Watershed Initiative.



Bayou Bartholomew

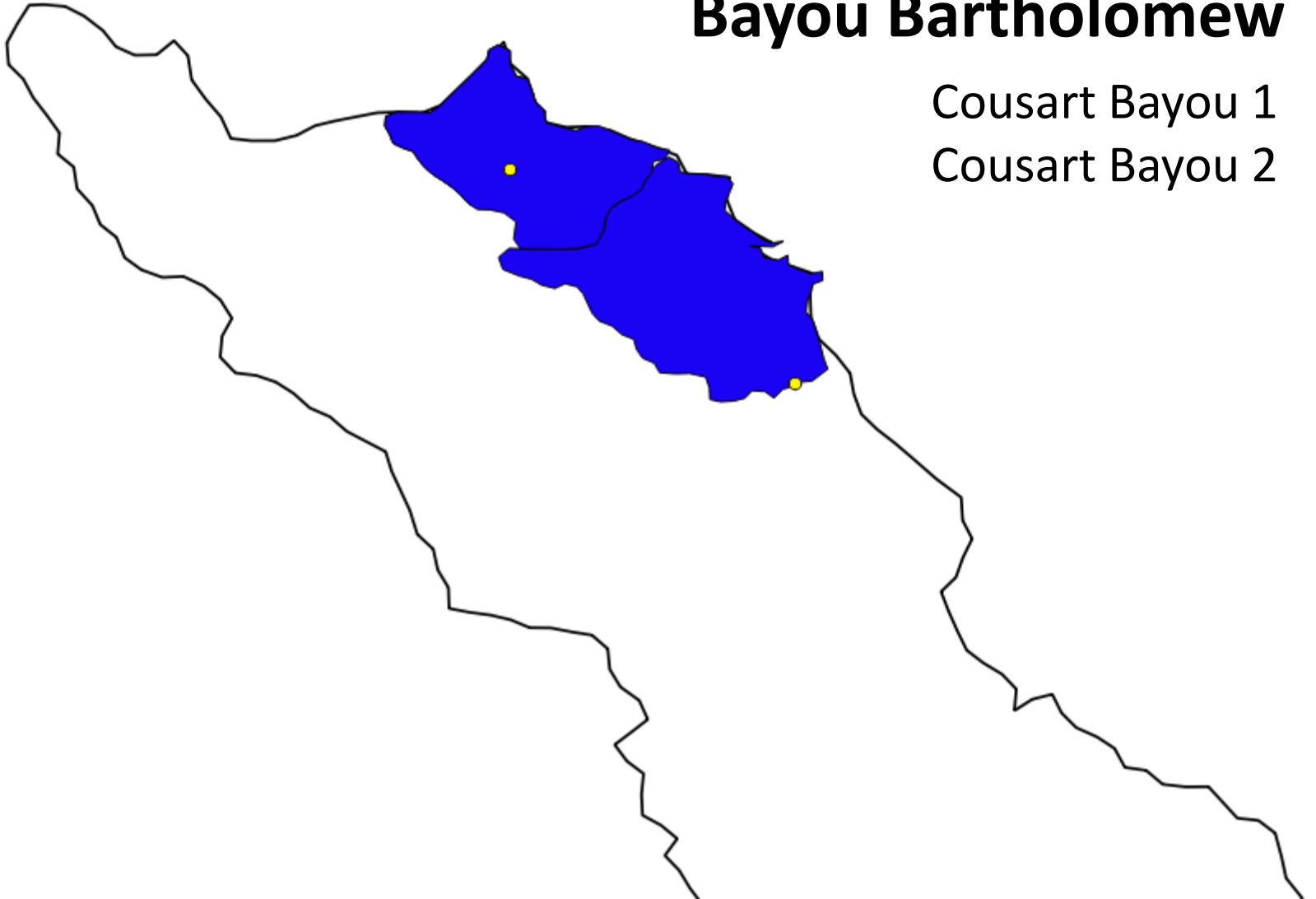
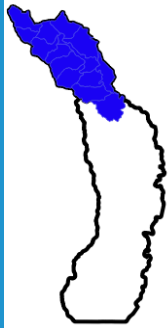
Cousart Bayou 1



Bayou Bartholomew

Cousart Bayou 1

Cousart Bayou 2

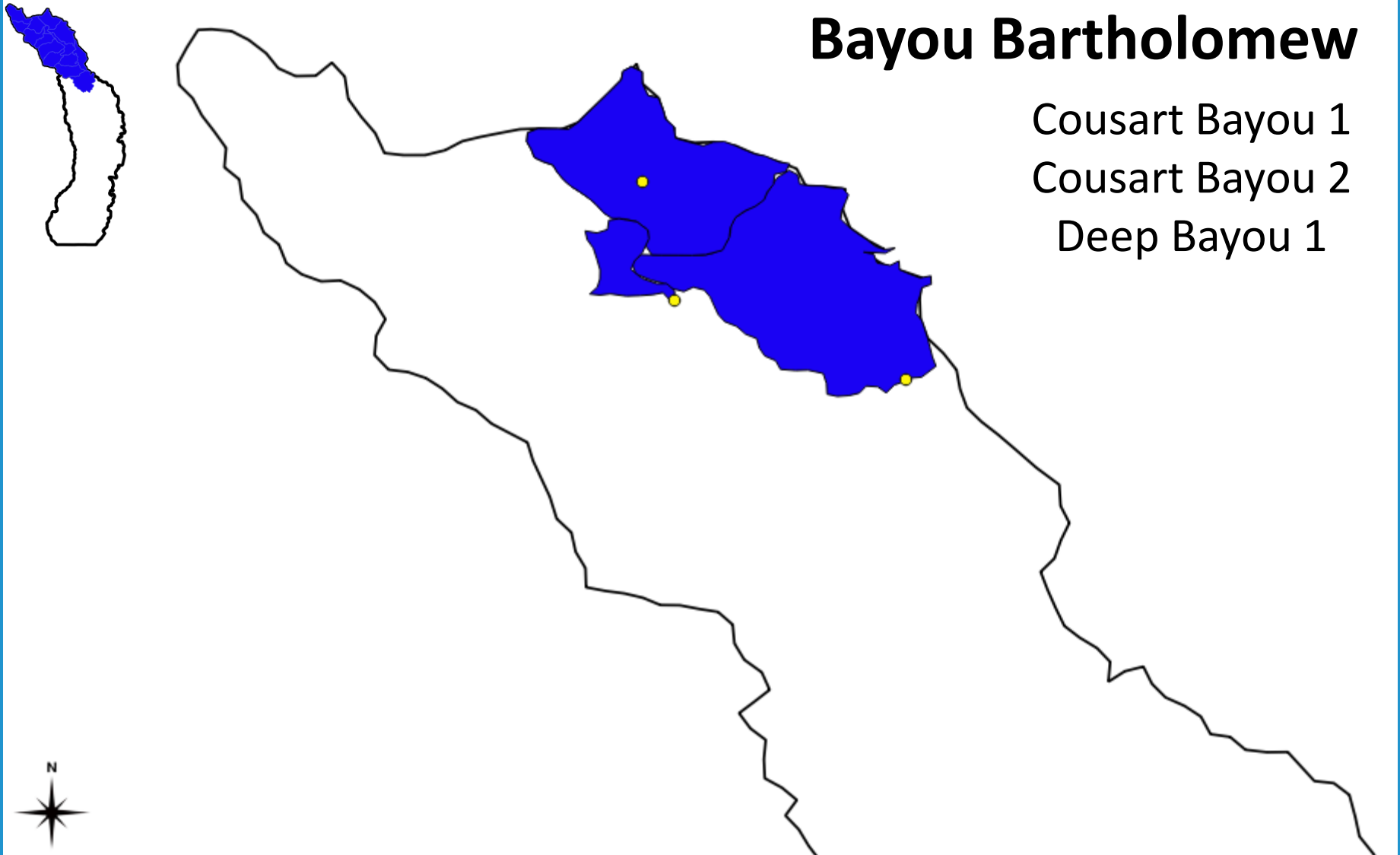


Bayou Bartholomew

Cousart Bayou 1

Cousart Bayou 2

Deep Bayou 1



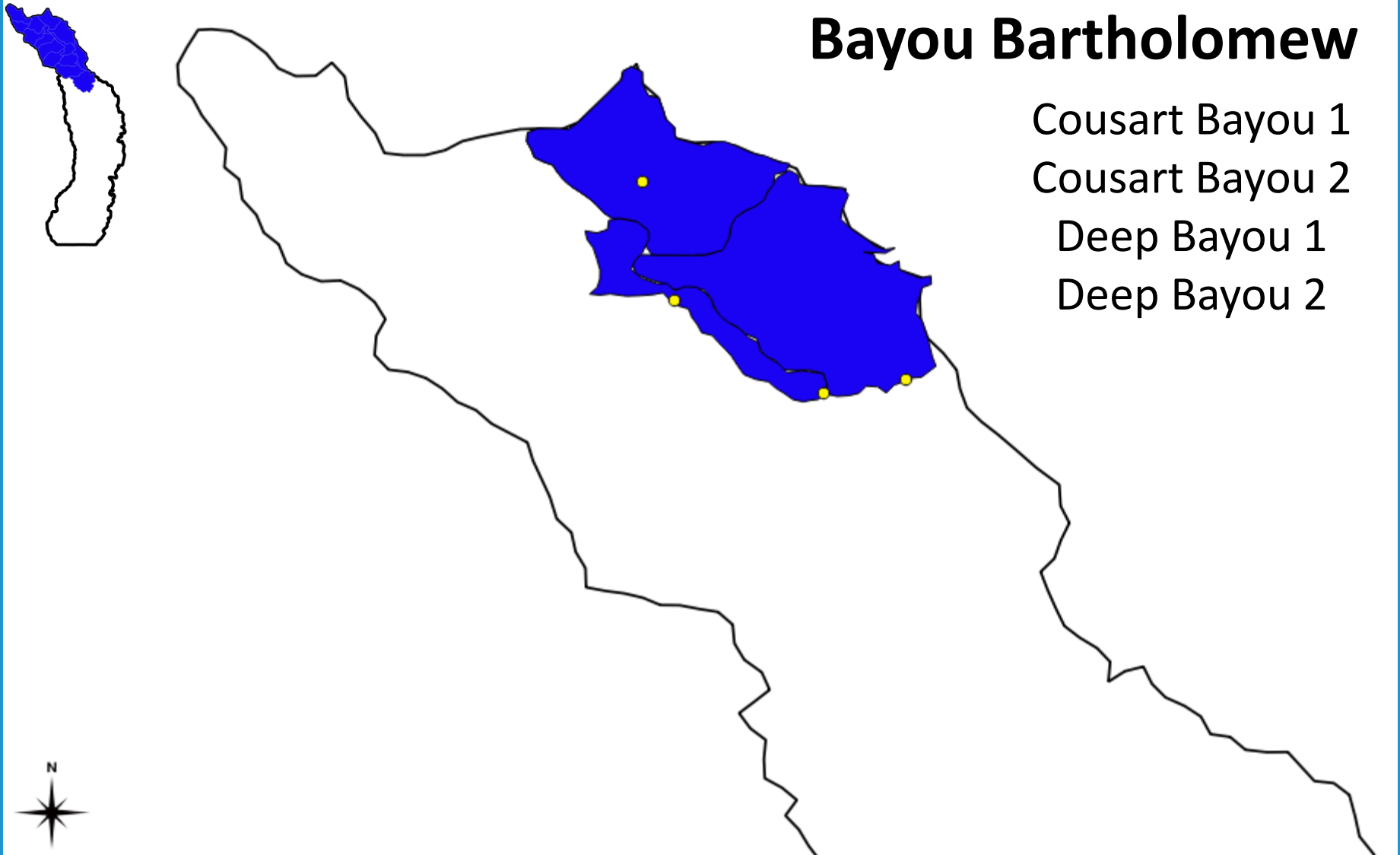
Bayou Bartholomew

Cousart Bayou 1

Cousart Bayou 2

Deep Bayou 1

Deep Bayou 2



Bayou Bartholomew

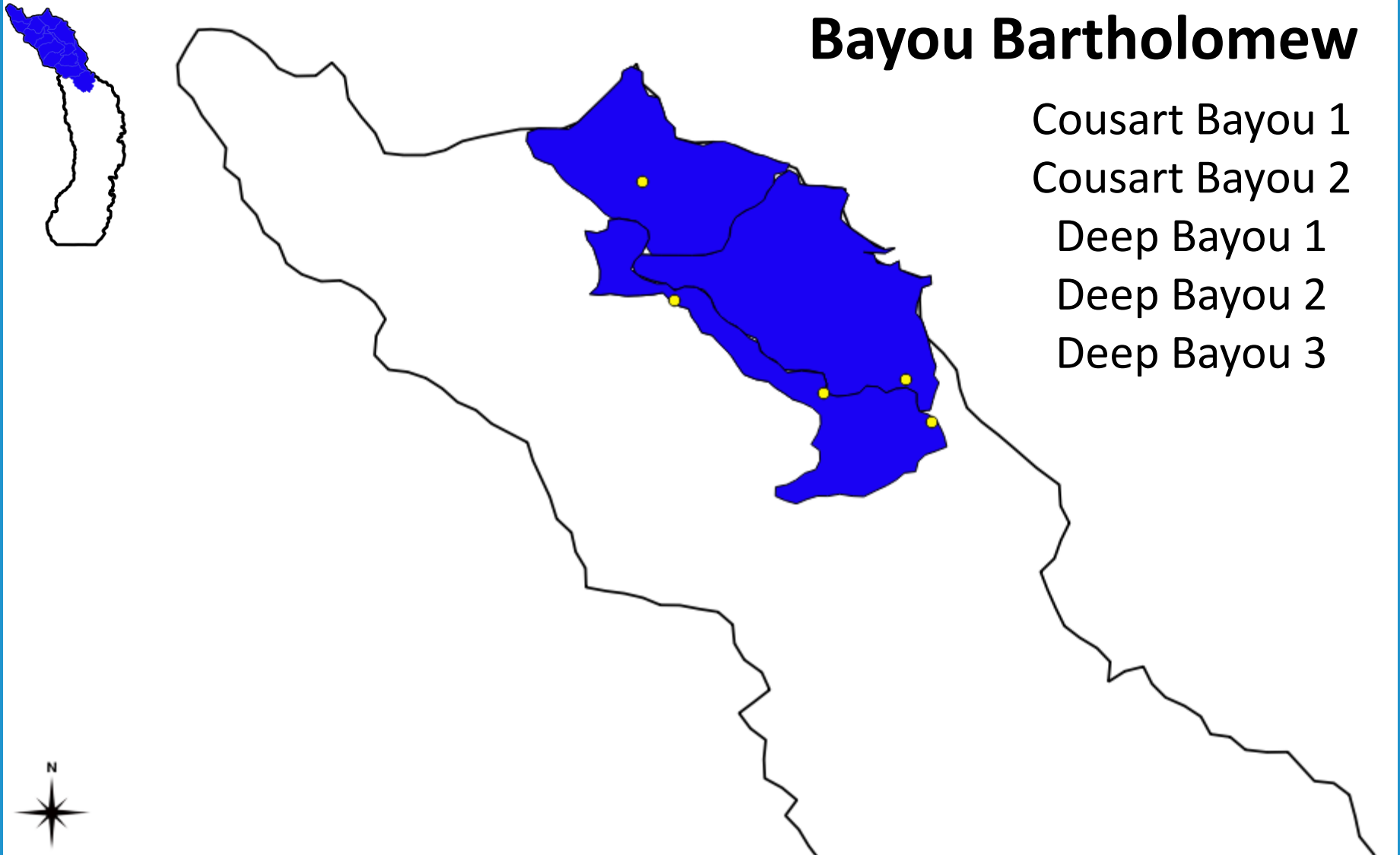
Cousart Bayou 1

Cousart Bayou 2

Deep Bayou 1

Deep Bayou 2

Deep Bayou 3



Bayou Bartholomew

Cousart Bayou 1

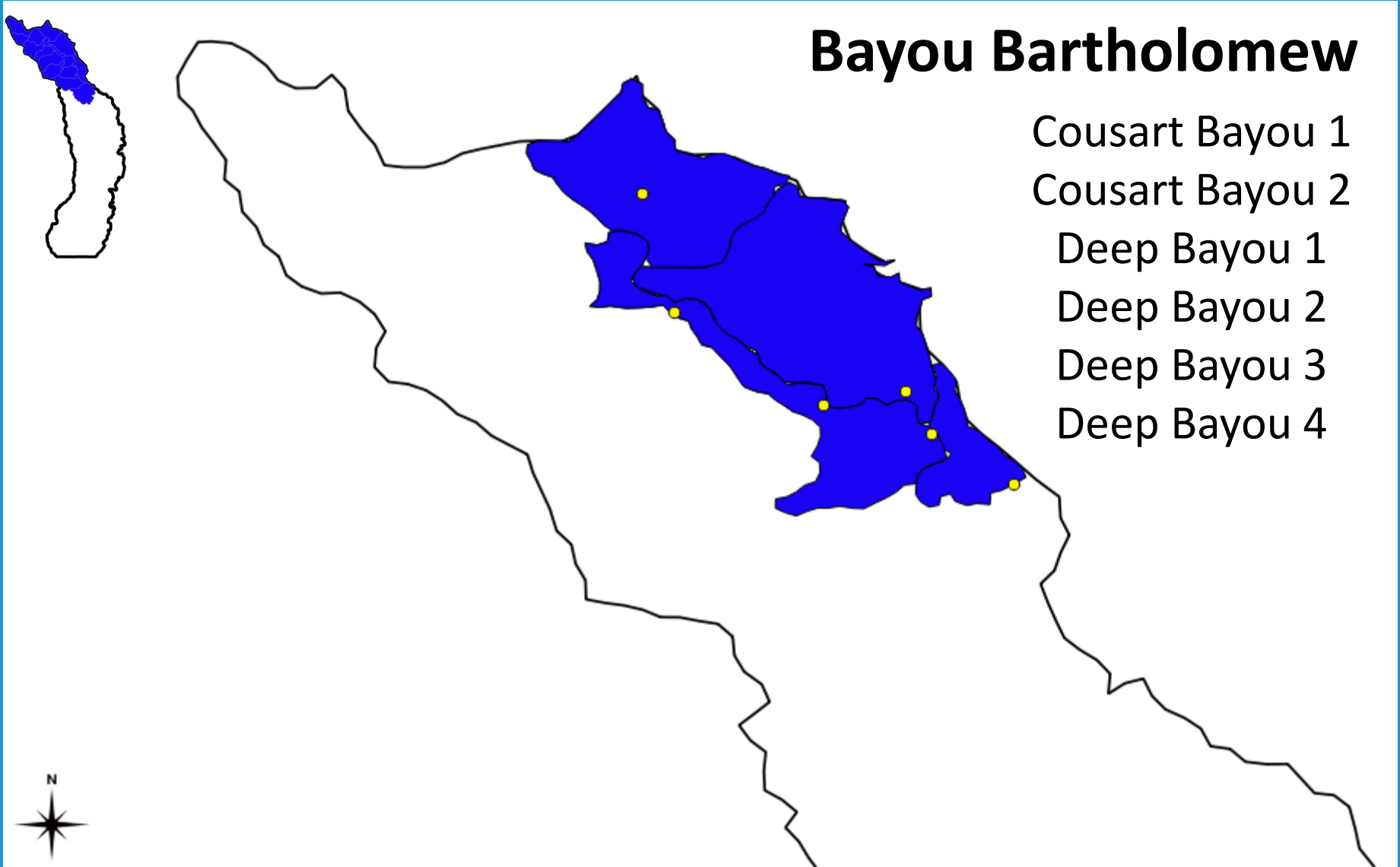
Cousart Bayou 2

Deep Bayou 1

Deep Bayou 2

Deep Bayou 3

Deep Bayou 4



Bayou Bartholomew

Cousart Bayou 1

Cousart Bayou 2

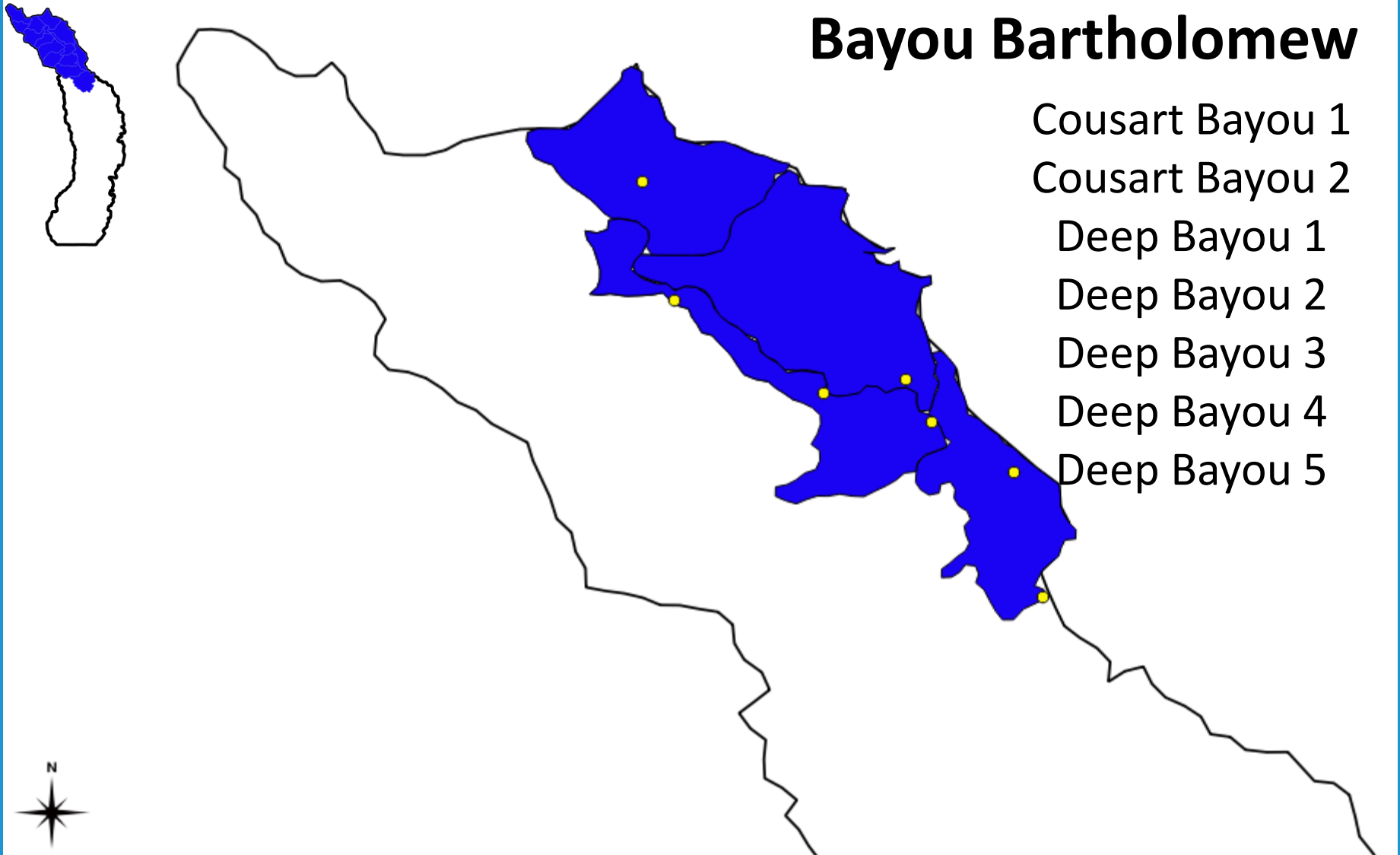
Deep Bayou 1

Deep Bayou 2

Deep Bayou 3

Deep Bayou 4

Deep Bayou 5



Bayou Bartholomew

Cousart Bayou 1

Cousart Bayou 2

Deep Bayou 1

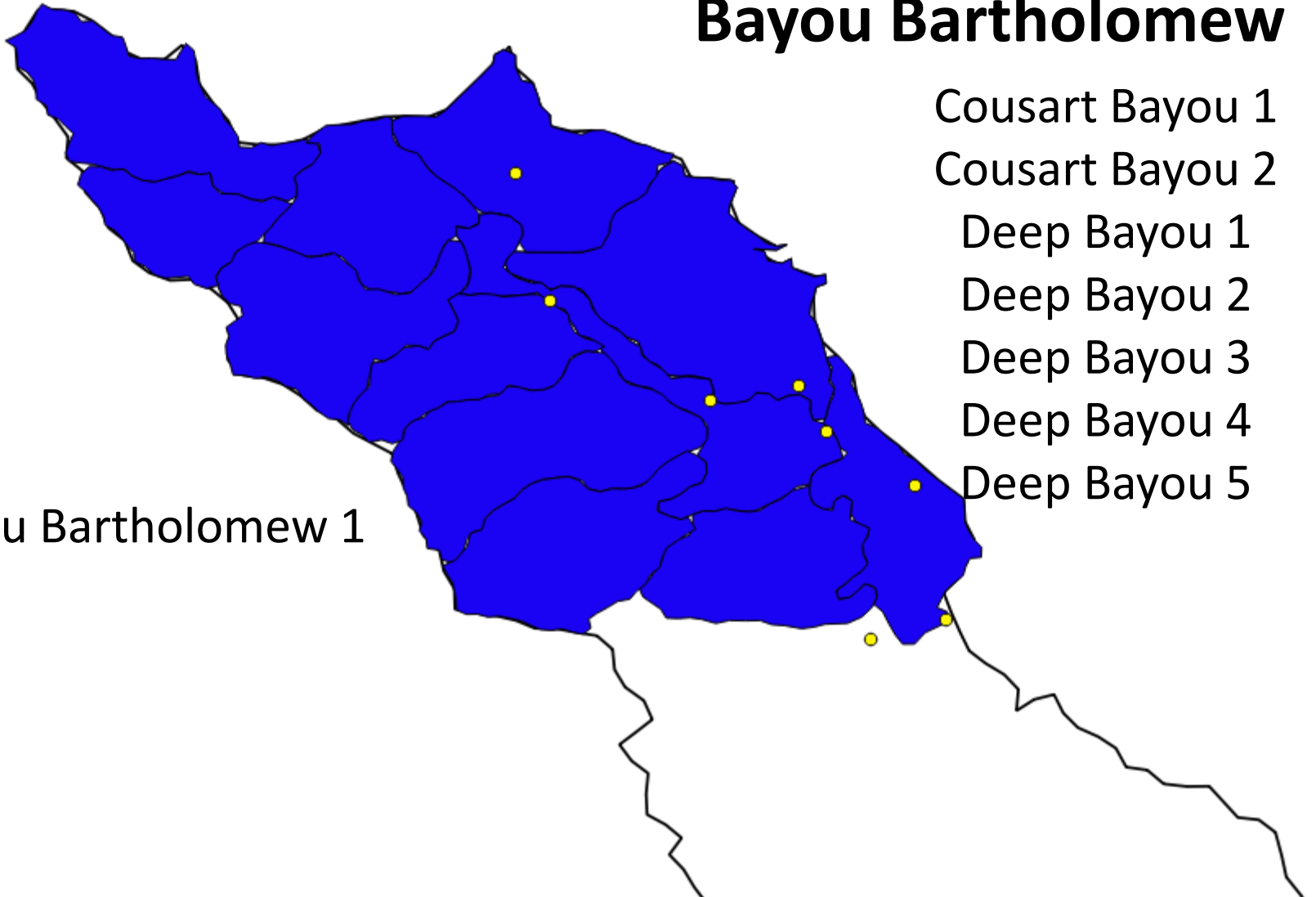
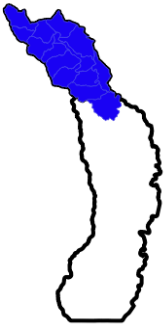
Deep Bayou 2

Deep Bayou 3

Deep Bayou 4

Deep Bayou 5

Bayou Bartholomew 1



Bayou Bartholomew

Cousart Bayou 1

Cousart Bayou 2

Deep Bayou 1

Deep Bayou 2

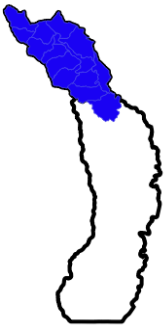
Deep Bayou 3

Deep Bayou 4

Deep Bayou 5

Bayou Bartholomew 1

Bayou Bartholomew 2



Bayou Bartholomew

Cousart Bayou 1

Cousart Bayou 2

Deep Bayou 1

Deep Bayou 2

Deep Bayou 3

Deep Bayou 4

Deep Bayou 5

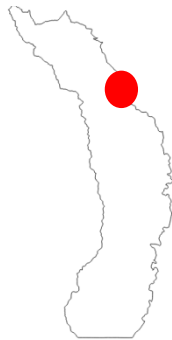
Bayou Bartholomew 1

Bayou Bartholomew 2

Bayou Bartholomew 3



Deep Bayou and Bayou Bartholomew Confluence



D5

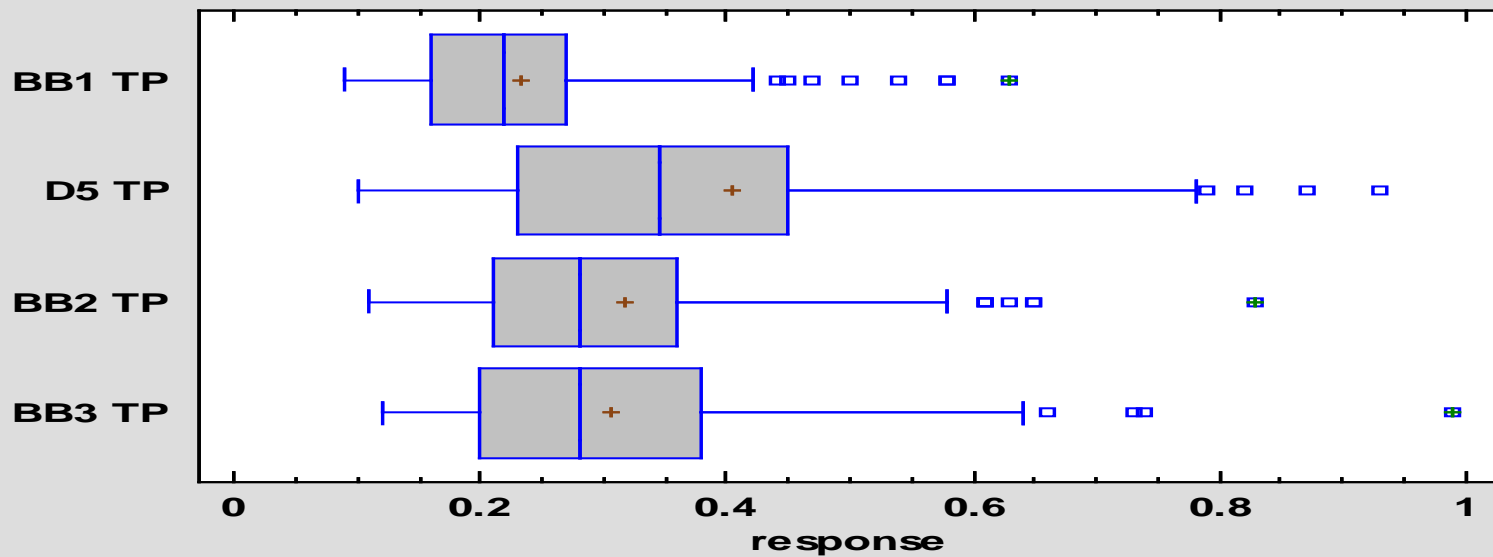
B1

B2

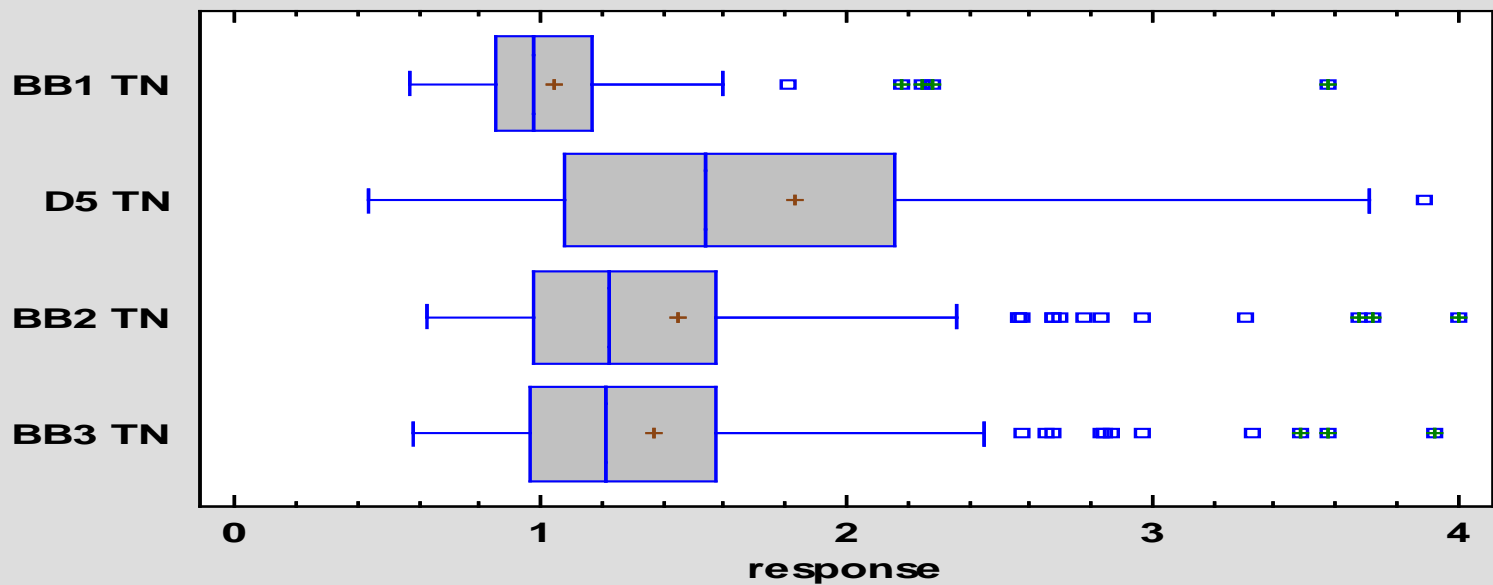
B3



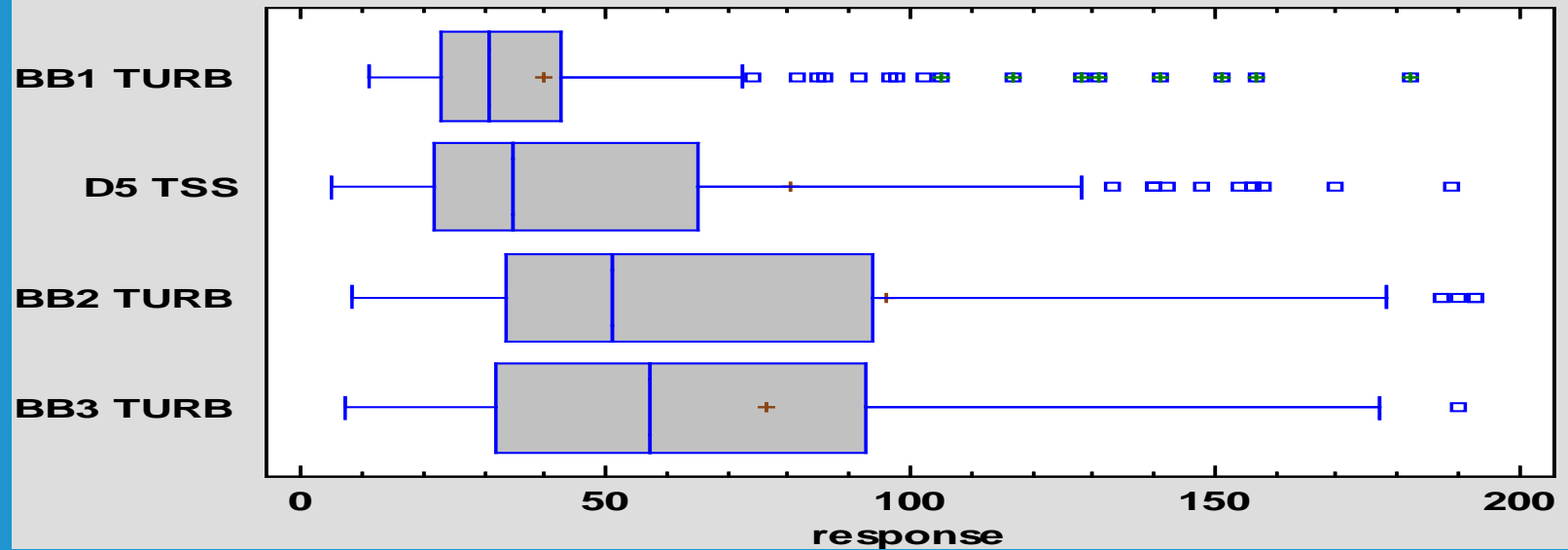
Bayou Bartholomew Total Phosphorus 2013 - 2017



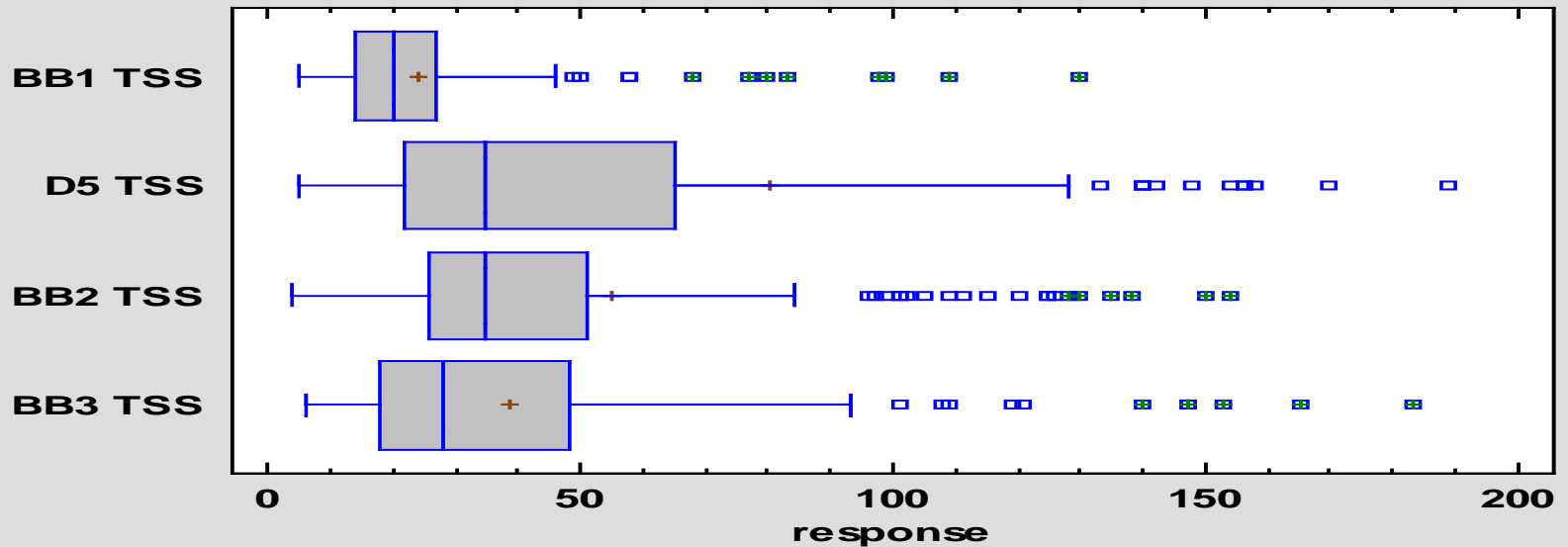
Bayou Bartholomew Total Nitrogen 2013 - 2017

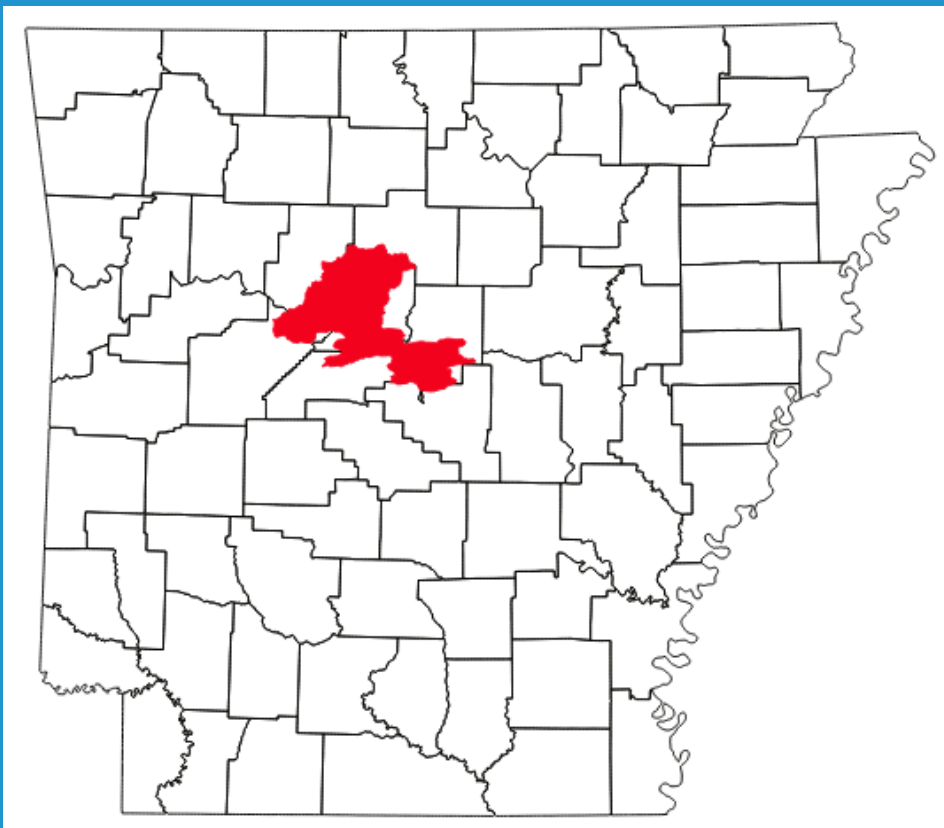


Bayou Bartholomew Turbidity 2013 - 2017



Bayou Bartholomew TSS 2013 - 2017

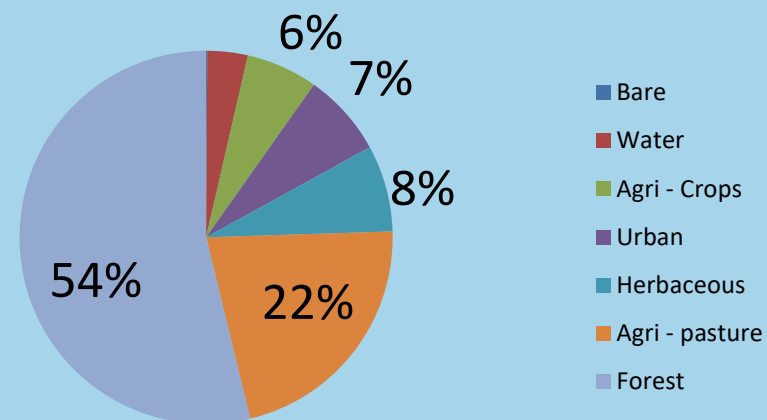




Lake Conway Point Remove Watershed

Primary focus is East Fork and West Fork of Point Remove Creek

Lake Conway Point Remove HUC



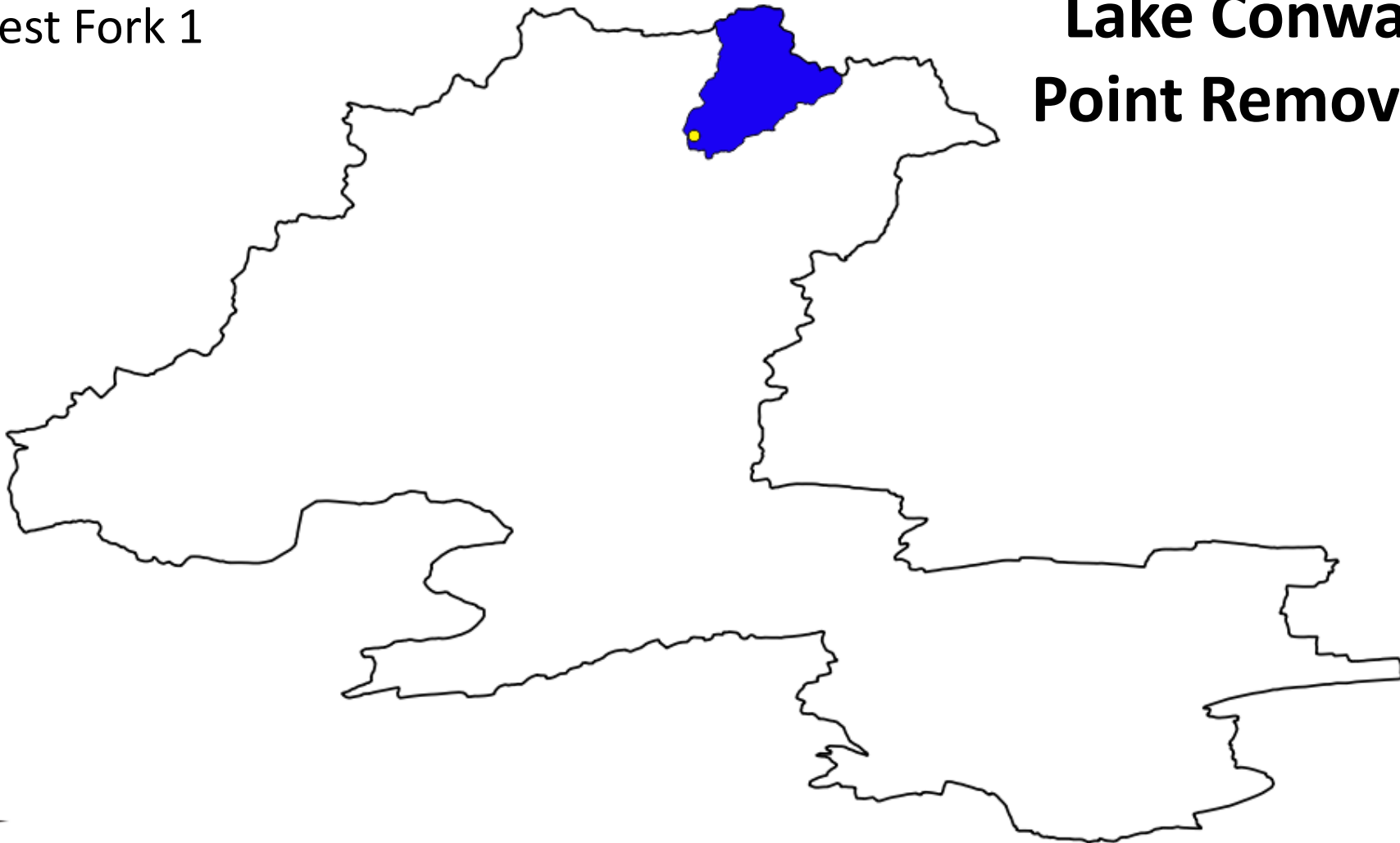
LCPR scored 91 in the Final Risk Assessment Matrix Percentile of the Arkansas' Nonpoint Source Pollution Watershed Risk Matrix and has been selected as a priority watershed.

NRCS identified LCPR as a priority in the Mississippi River Basin Healthy Watershed Initiative.



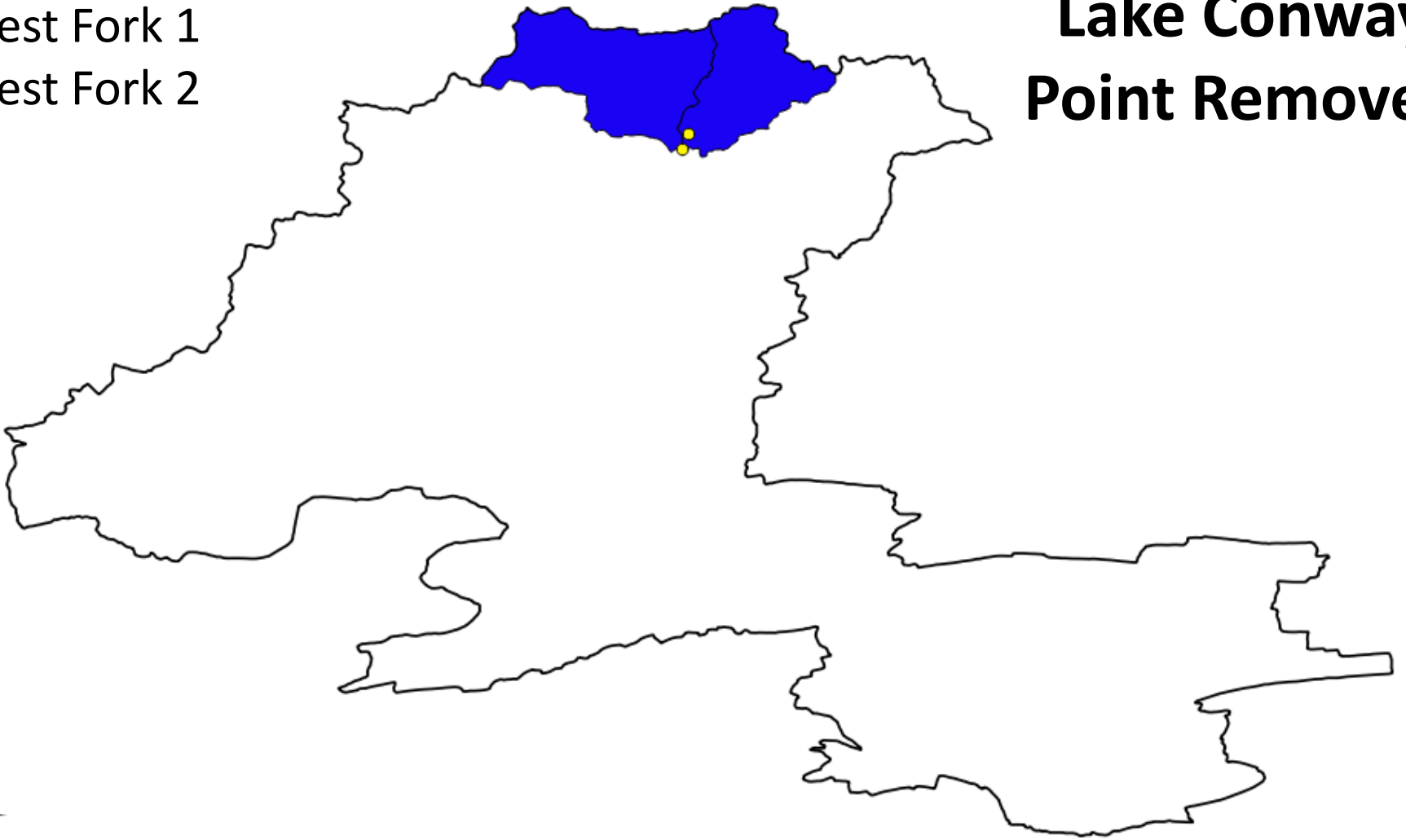
West Fork 1

**Lake Conway
Point Removed**



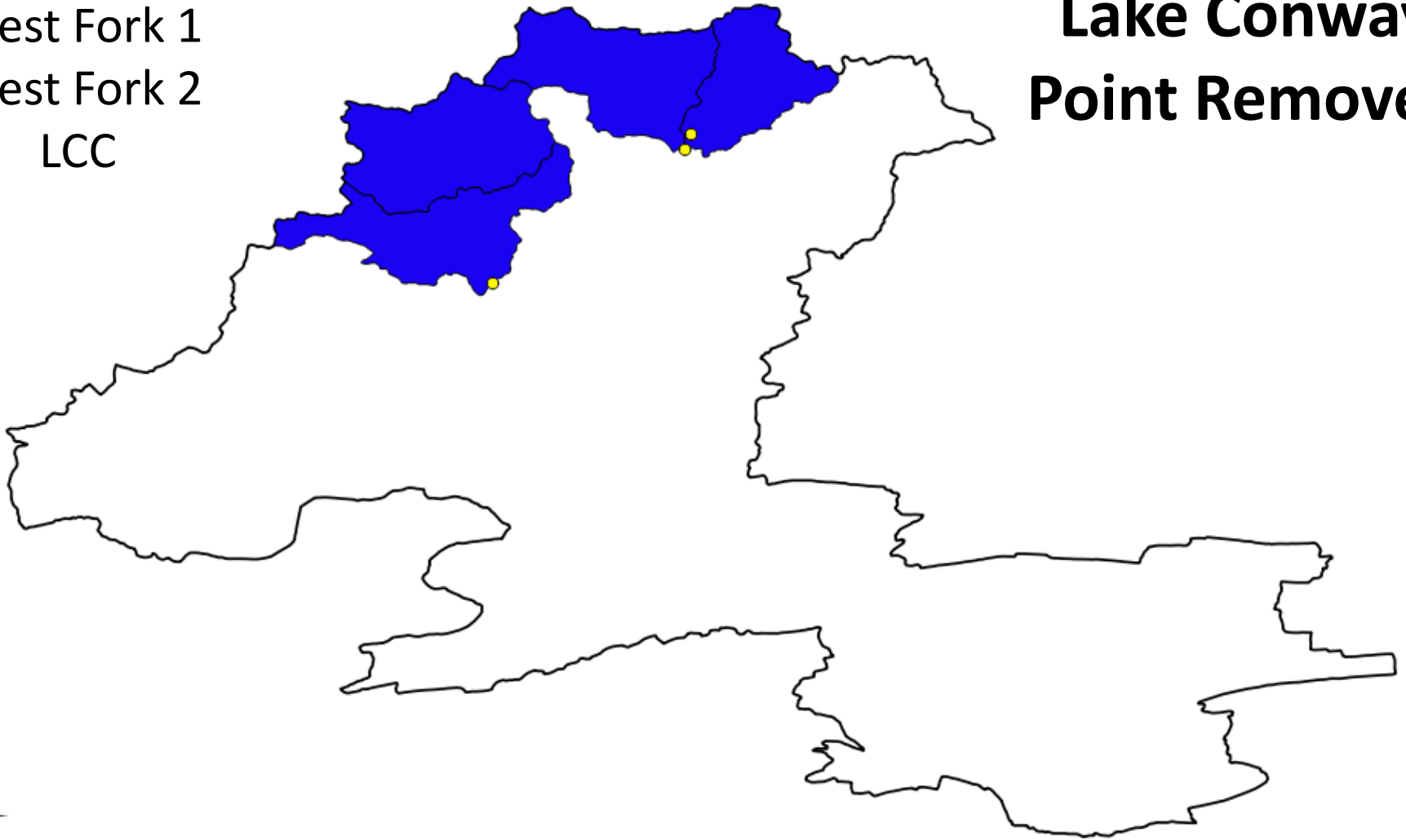
West Fork 1
West Fork 2

**Lake Conway
Point Removed**



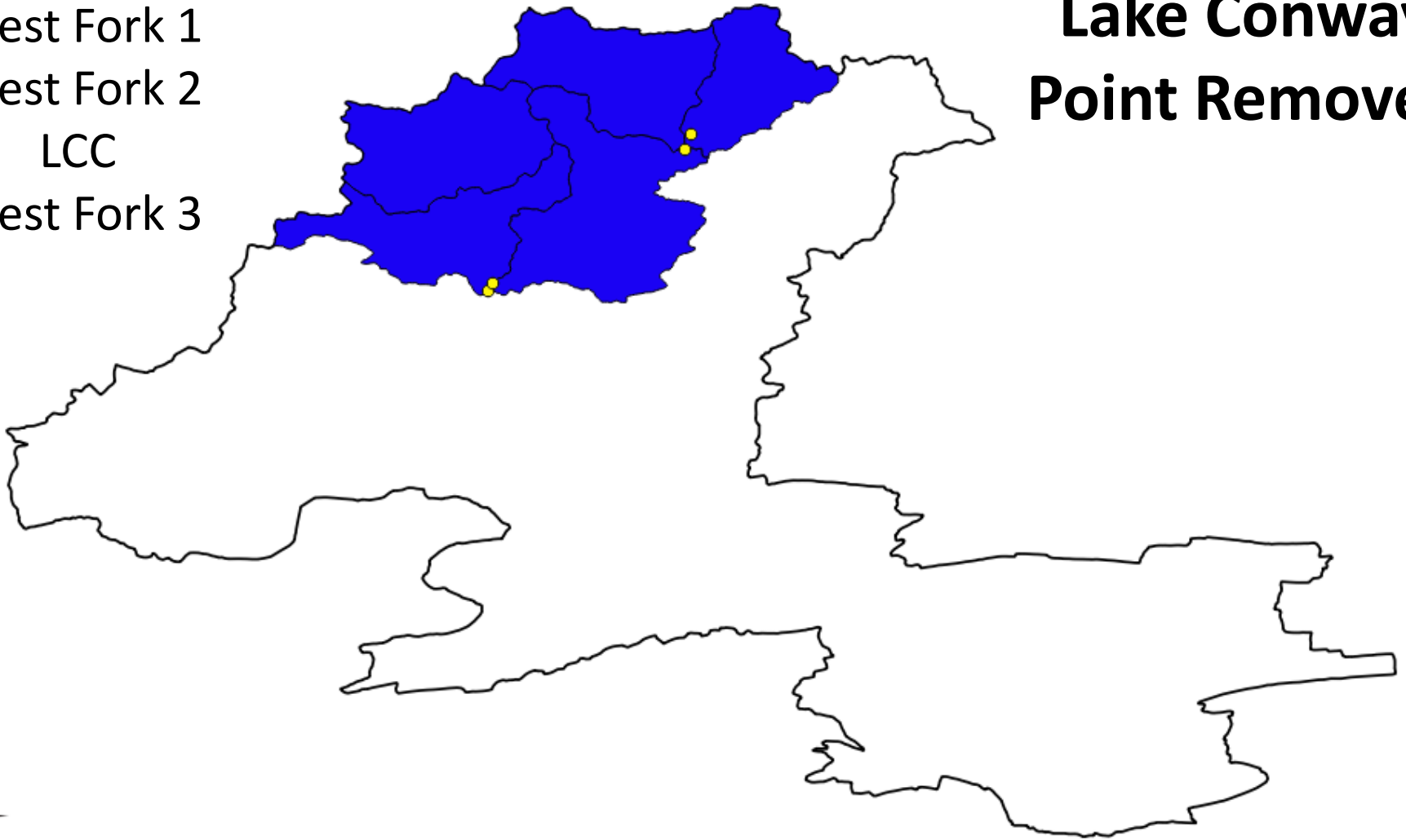
West Fork 1
West Fork 2
LCC

**Lake Conway
Point Removed**



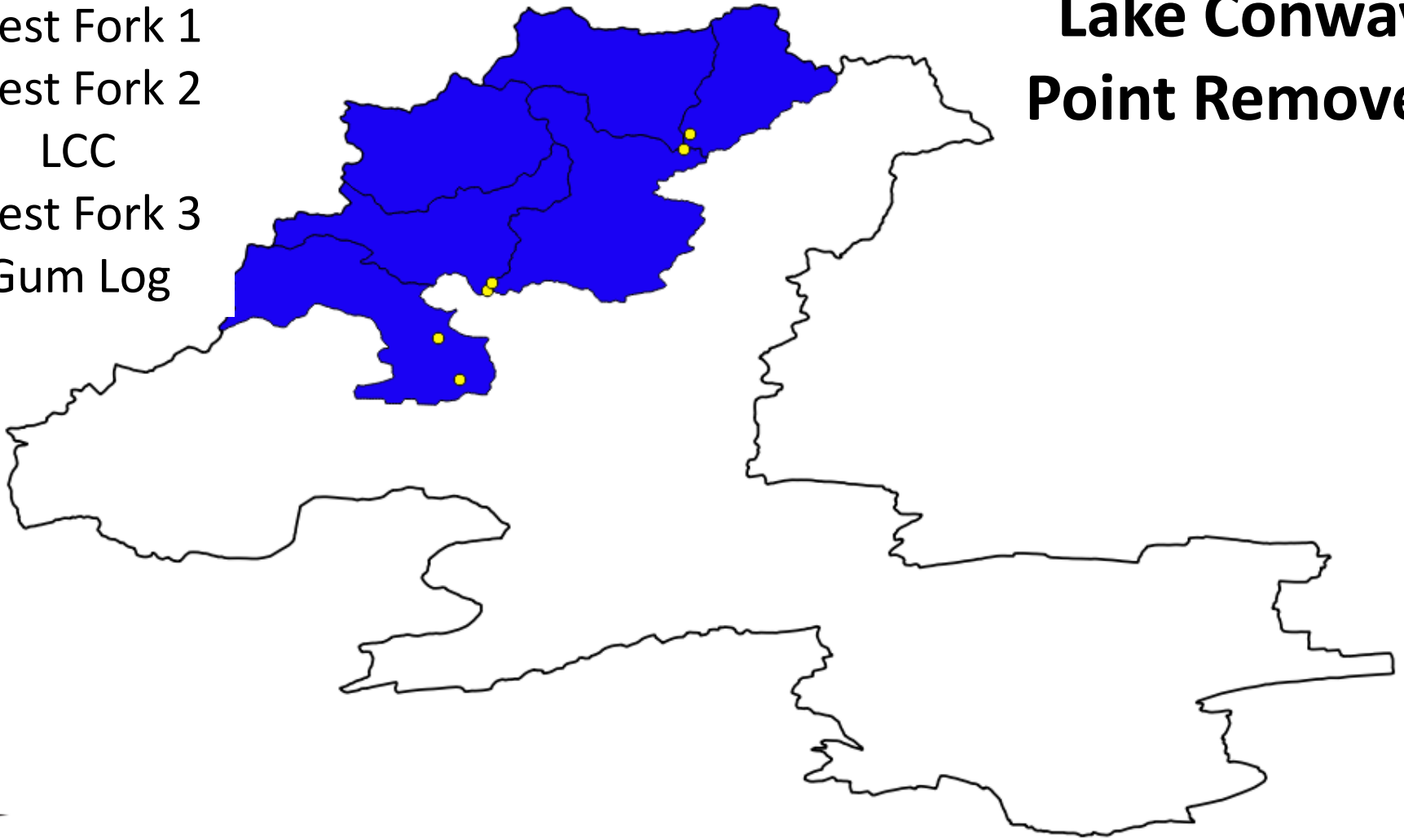
West Fork 1
West Fork 2
LCC
West Fork 3

Lake Conway Point Removed



West Fork 1
West Fork 2
LCC
West Fork 3
Gum Log

Lake Conway Point Removed



West Fork 1

West Fork 2

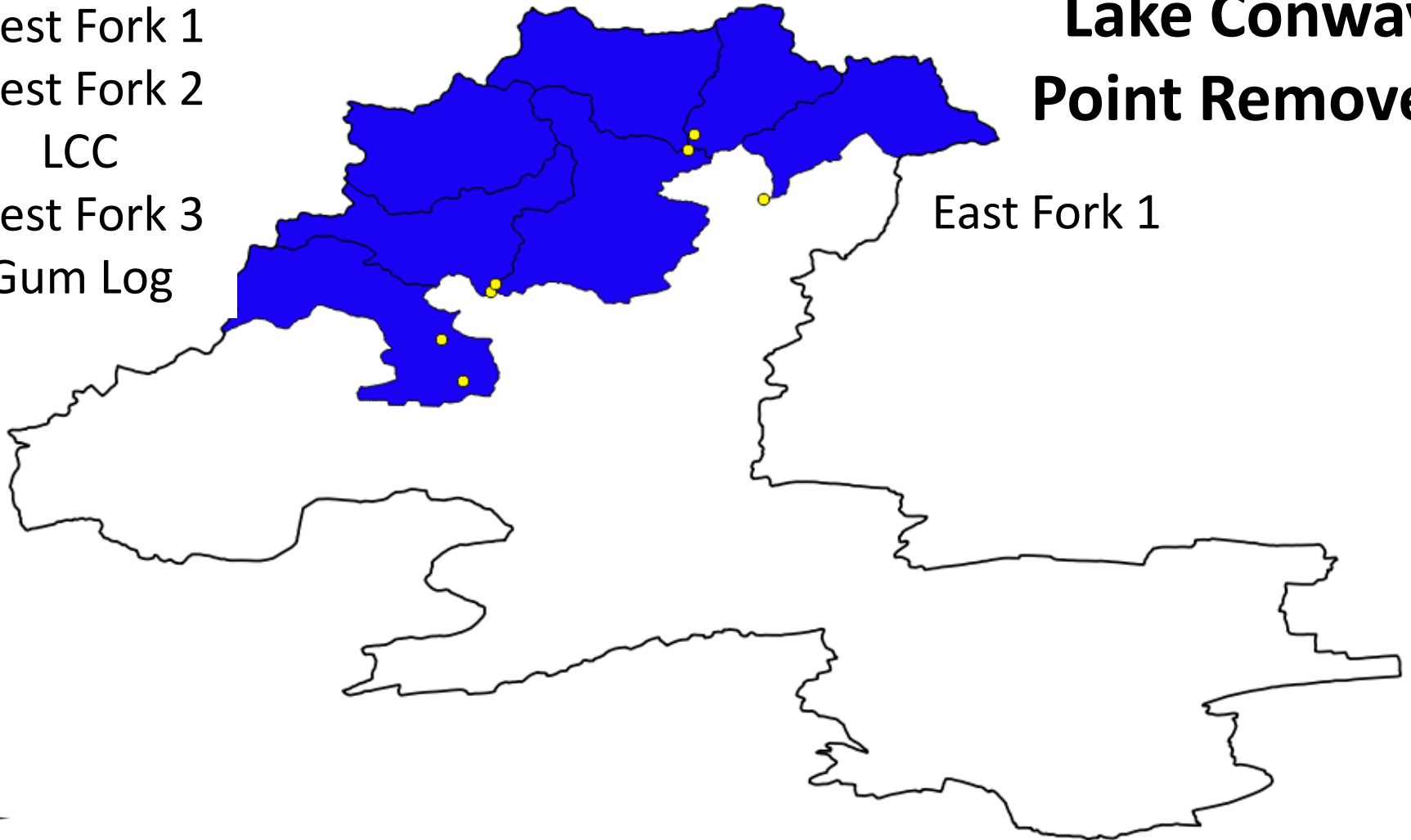
LCC

West Fork 3

Gum Log

Lake Conway Point Removed

East Fork 1



West Fork 1

West Fork 2

LCC

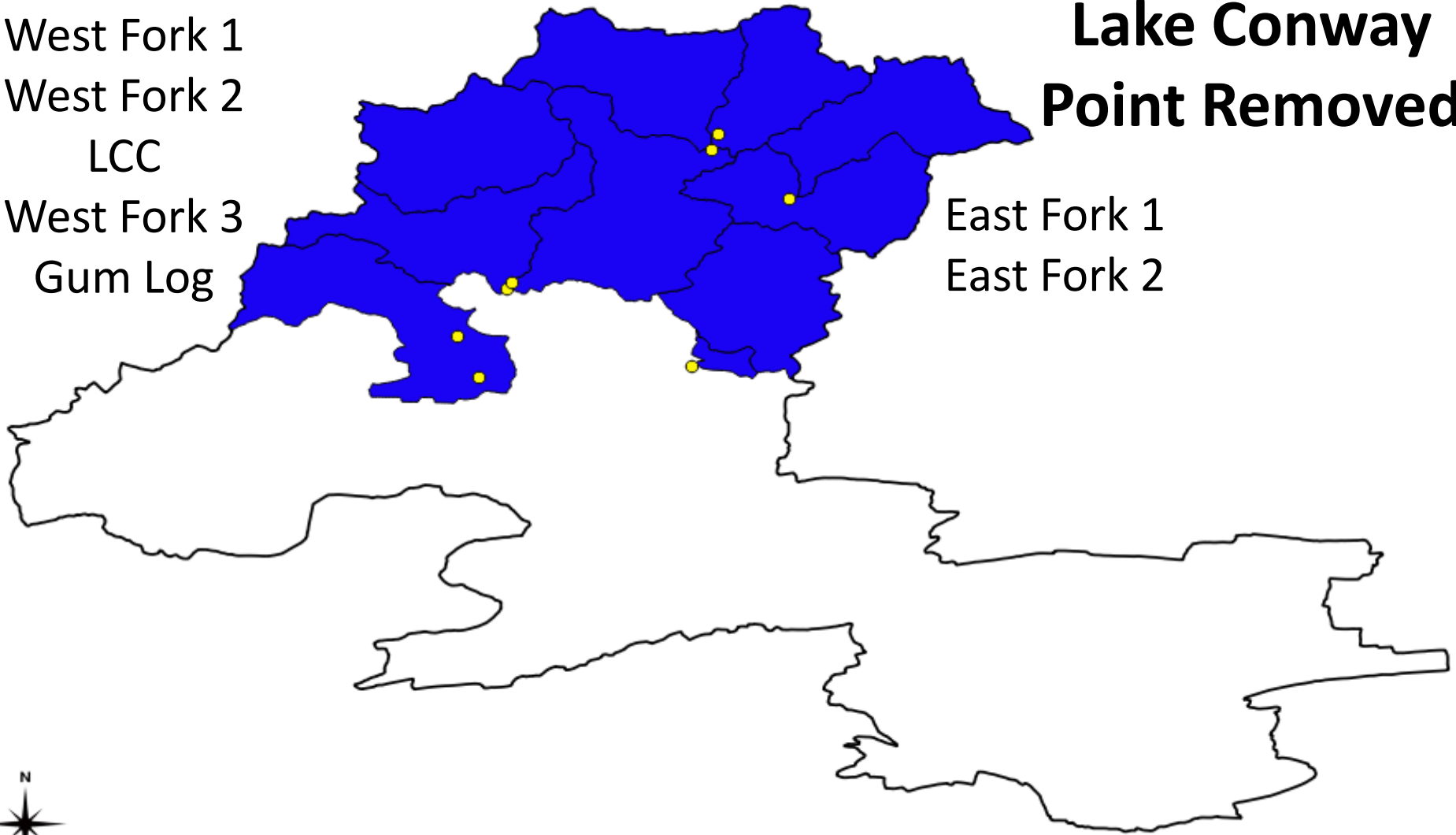
West Fork 3

Gum Log

Lake Conway Point Removed

East Fork 1

East Fork 2



West Fork 1

West Fork 2

LCC

West Fork 3

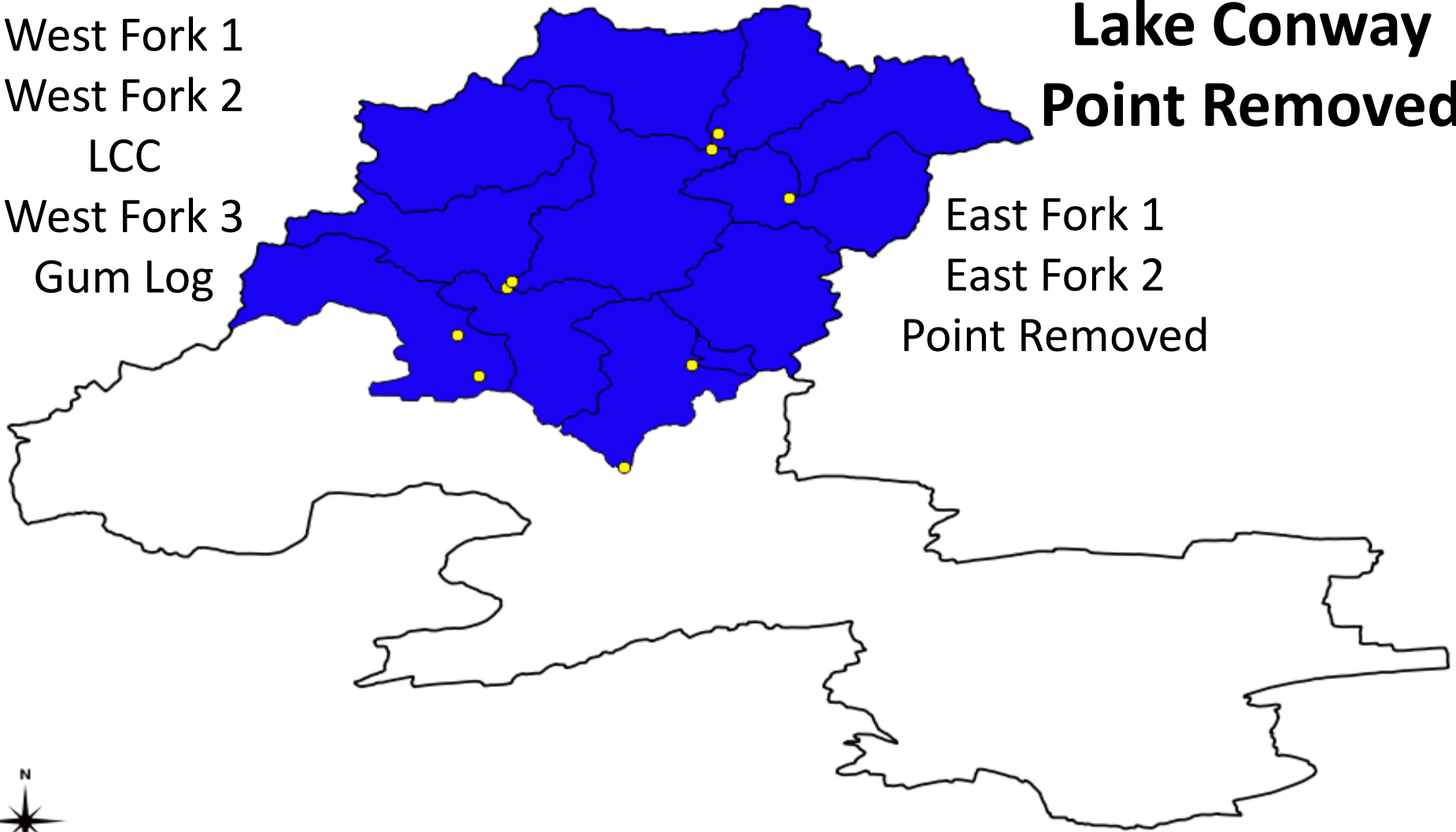
Gum Log

Lake Conway
Point Removed

East Fork 1

East Fork 2

Point Removed



West Fork 1

West Fork 2

LCC

West Fork 3

Gum Log

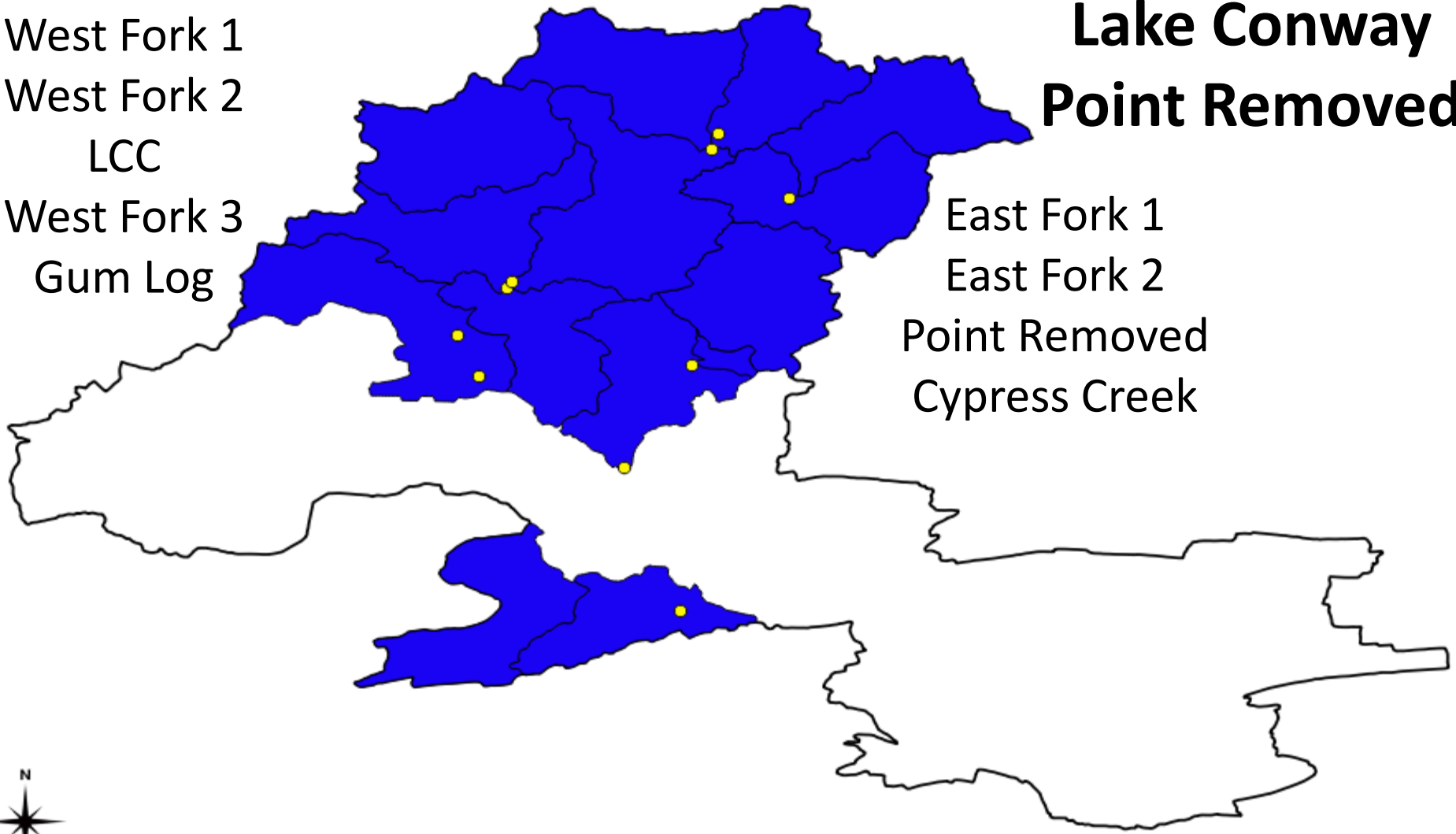
Lake Conway Point Removed

East Fork 1

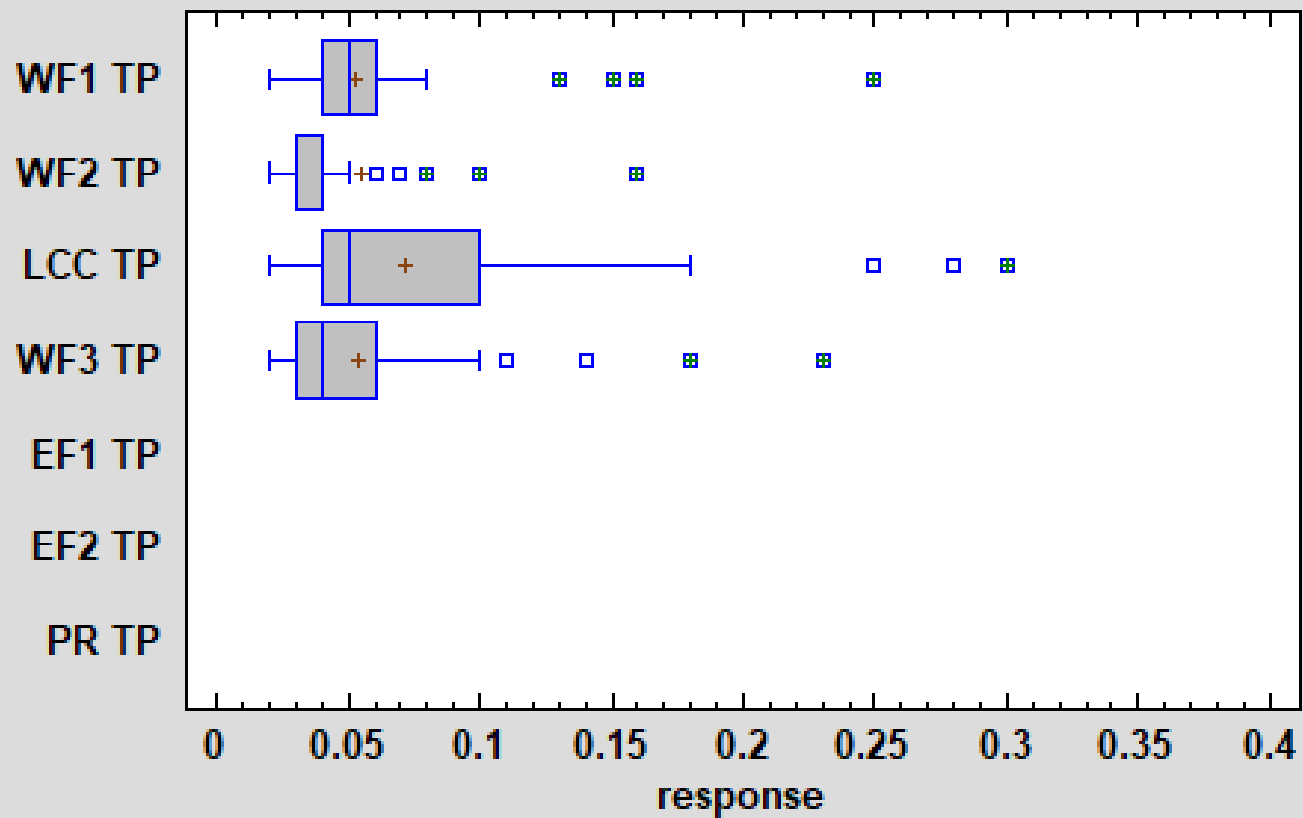
East Fork 2

Point Removed

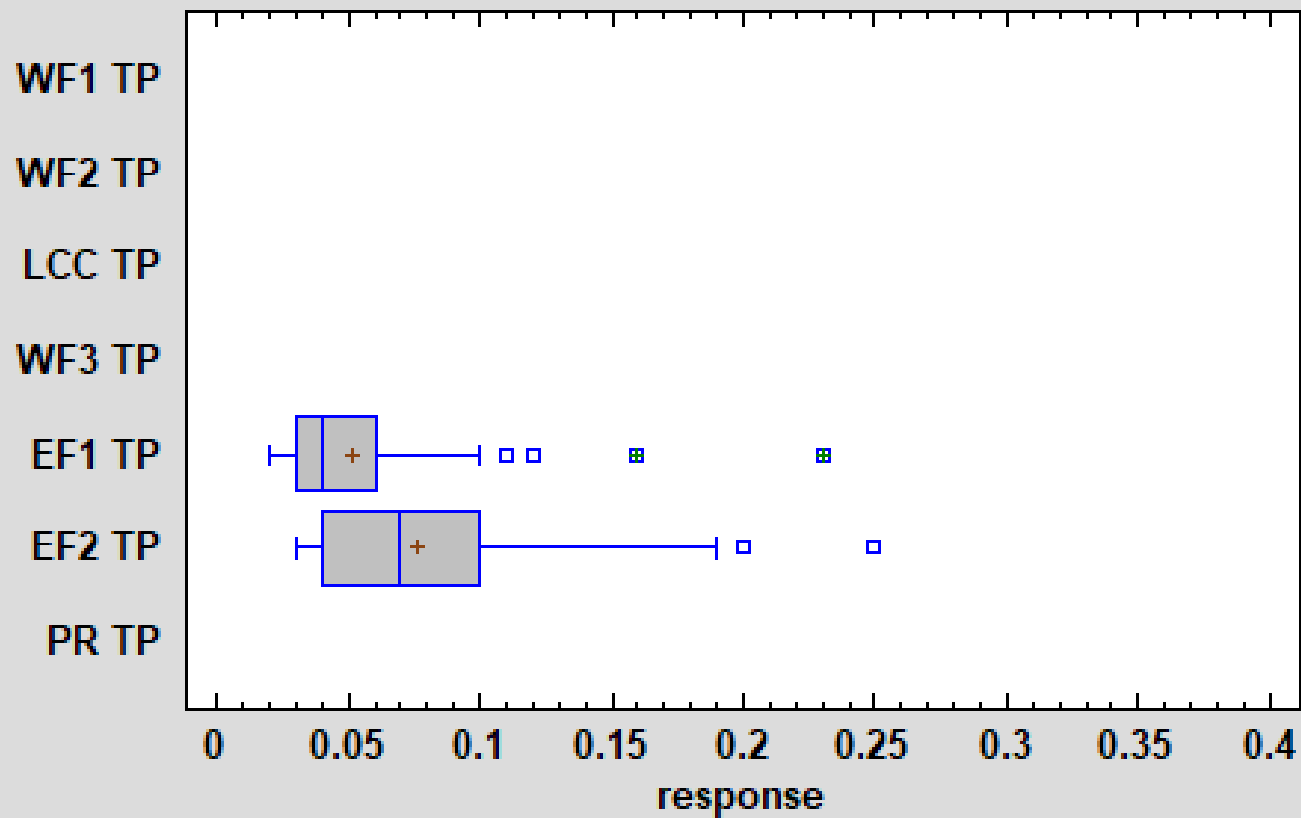
Cypress Creek



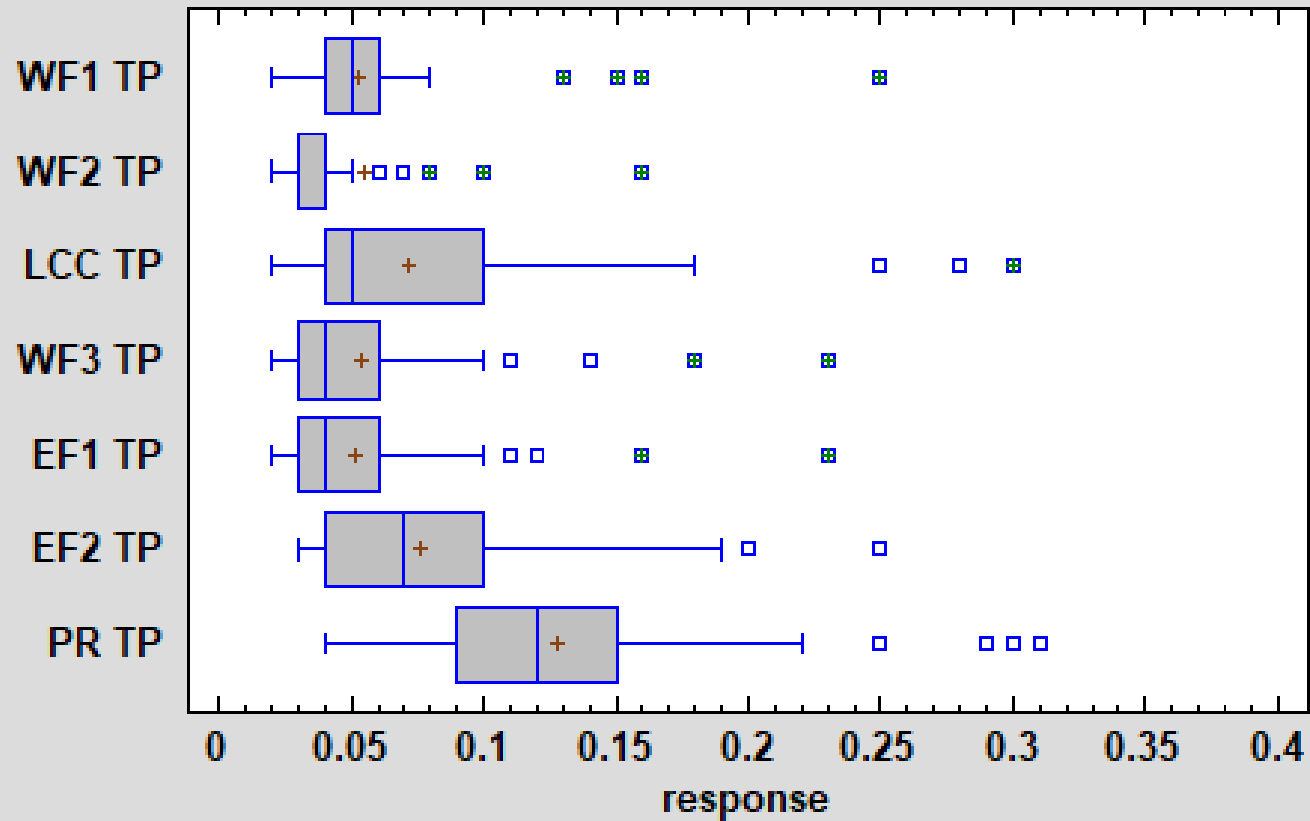
Lake Conway Point Removed Total Phosphorus



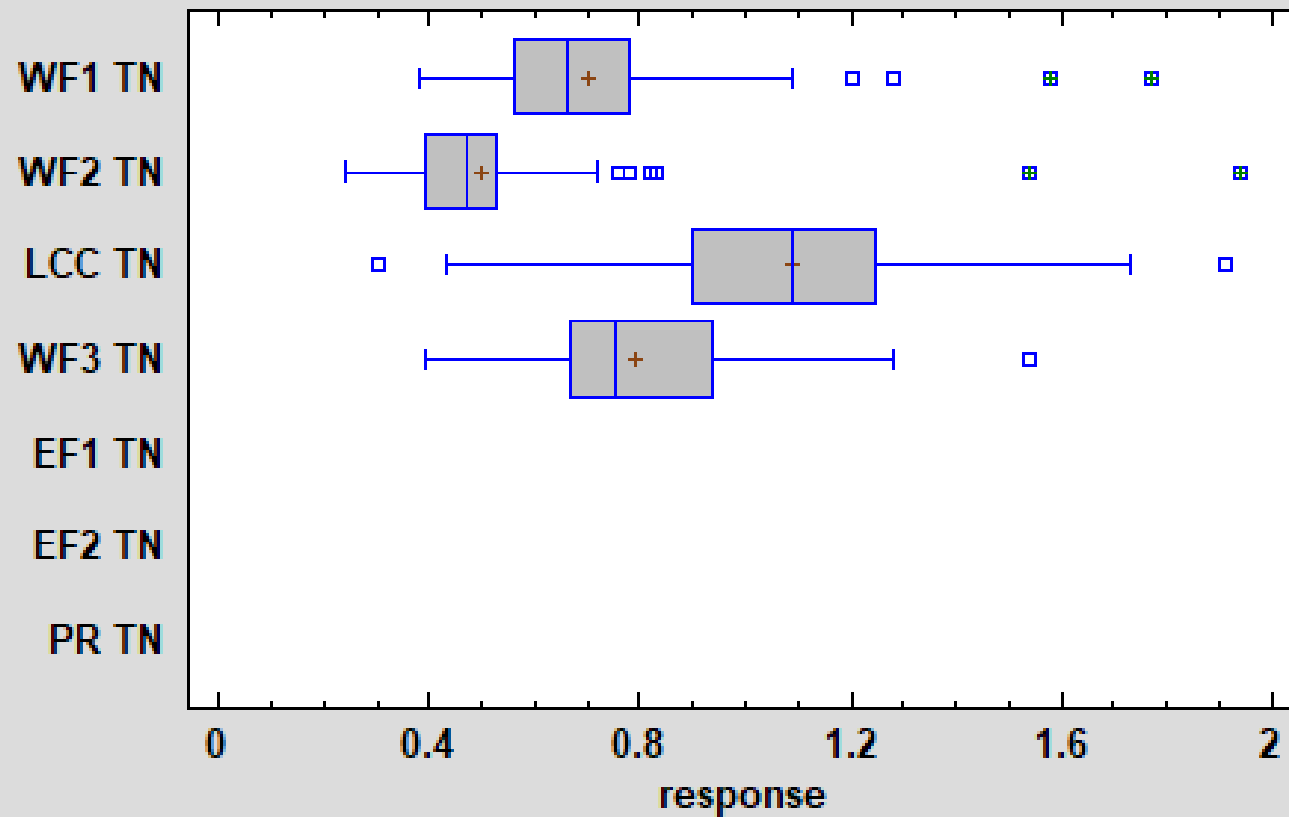
Lake Conway Point Removed Total Phosphorus



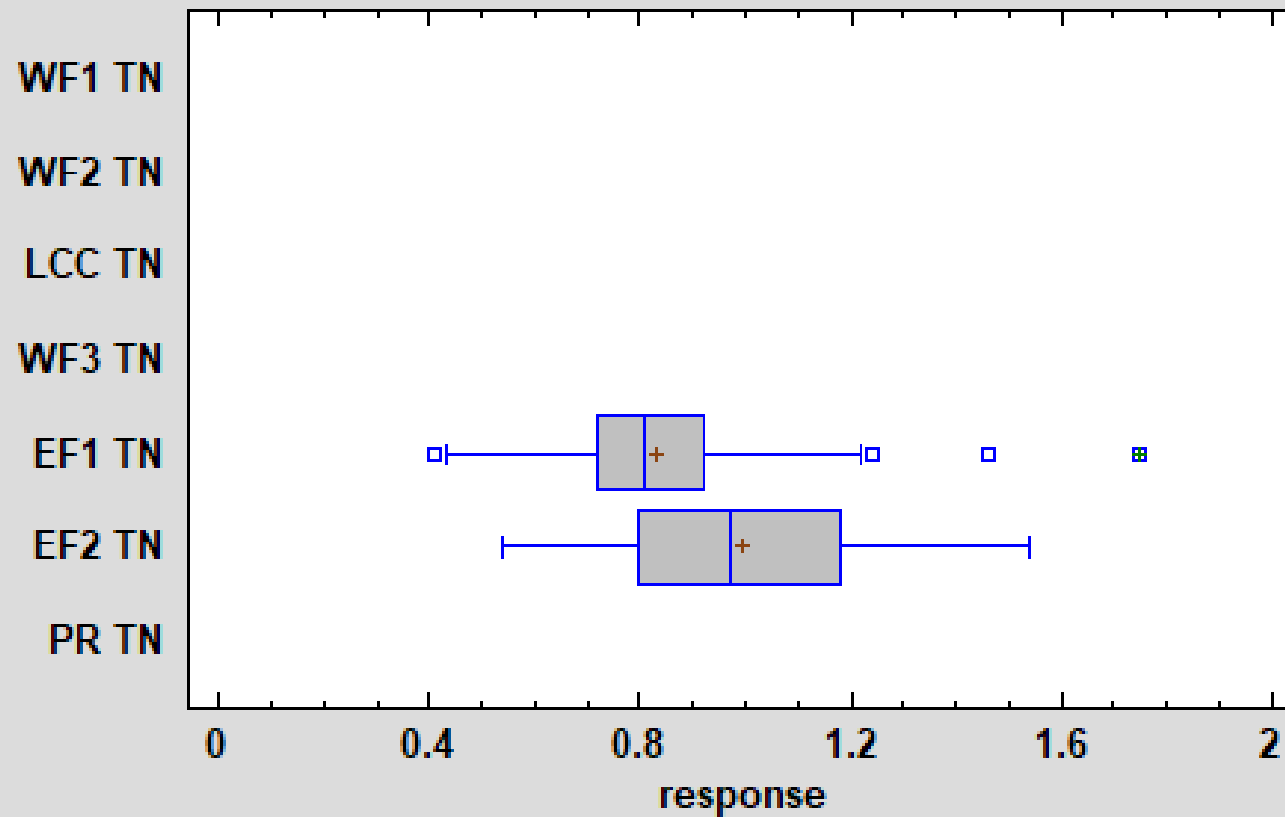
Lake Conway Point Removed Total Phosphorus



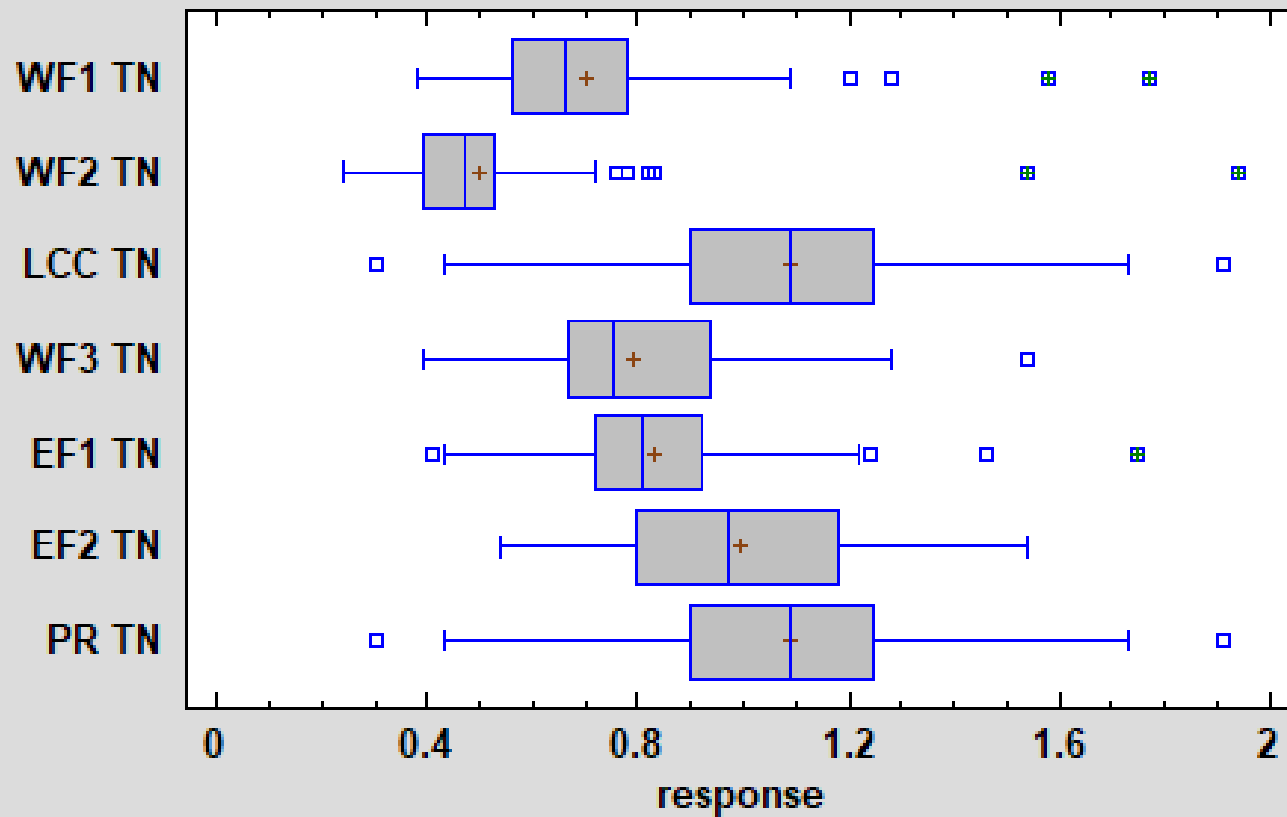
Lake Conway Point Removed Total Nitrogen



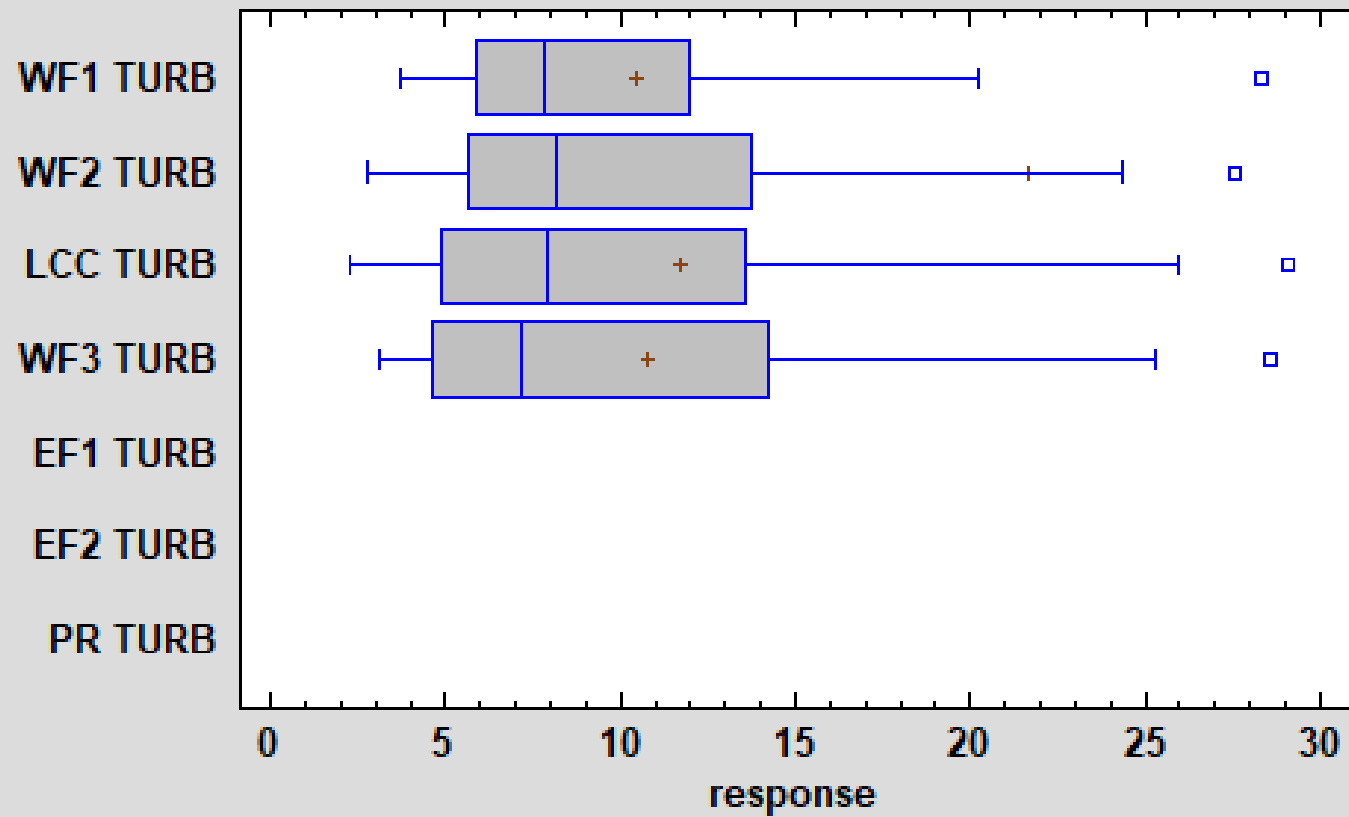
Lake Conway Point Removed Total Nitrogen



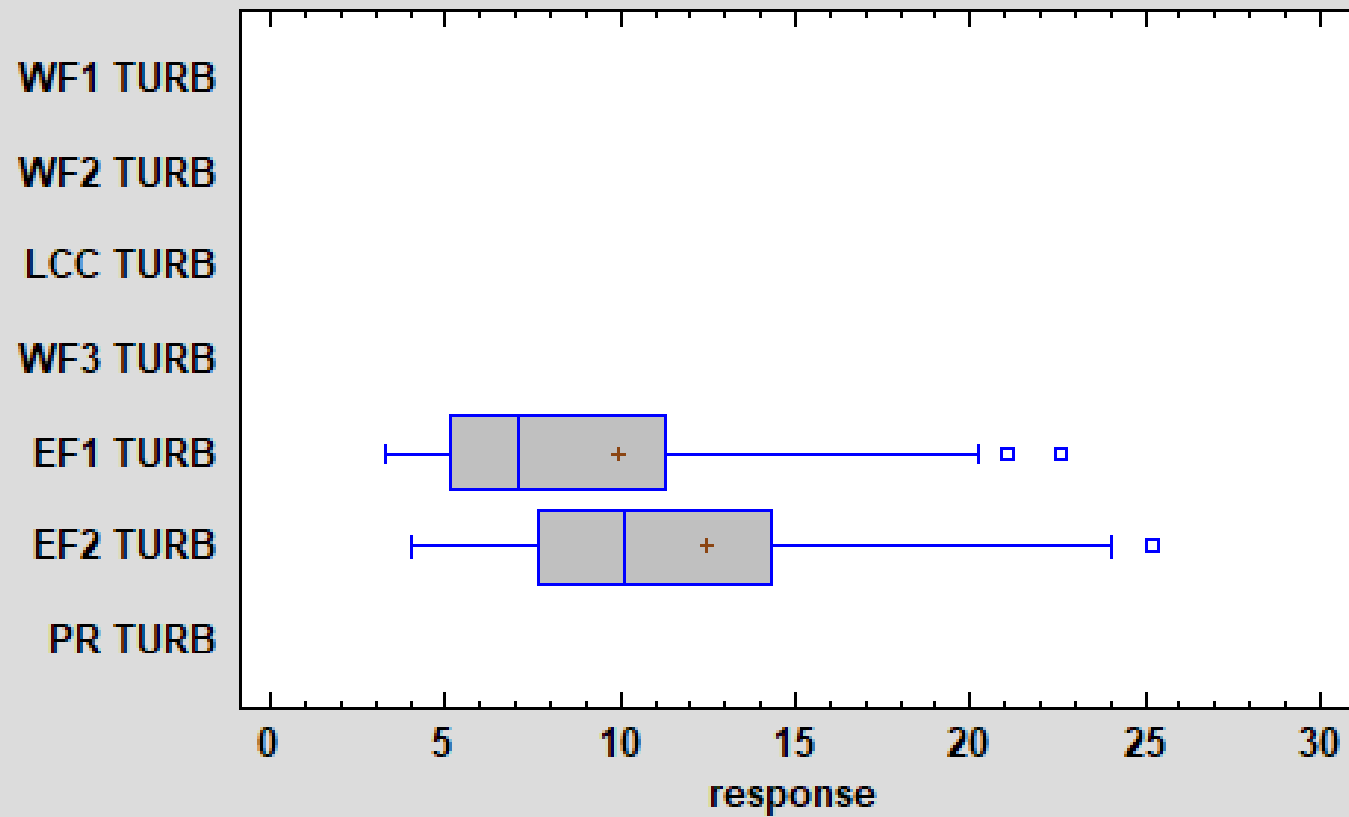
Lake Conway Point Removed Total Nitrogen



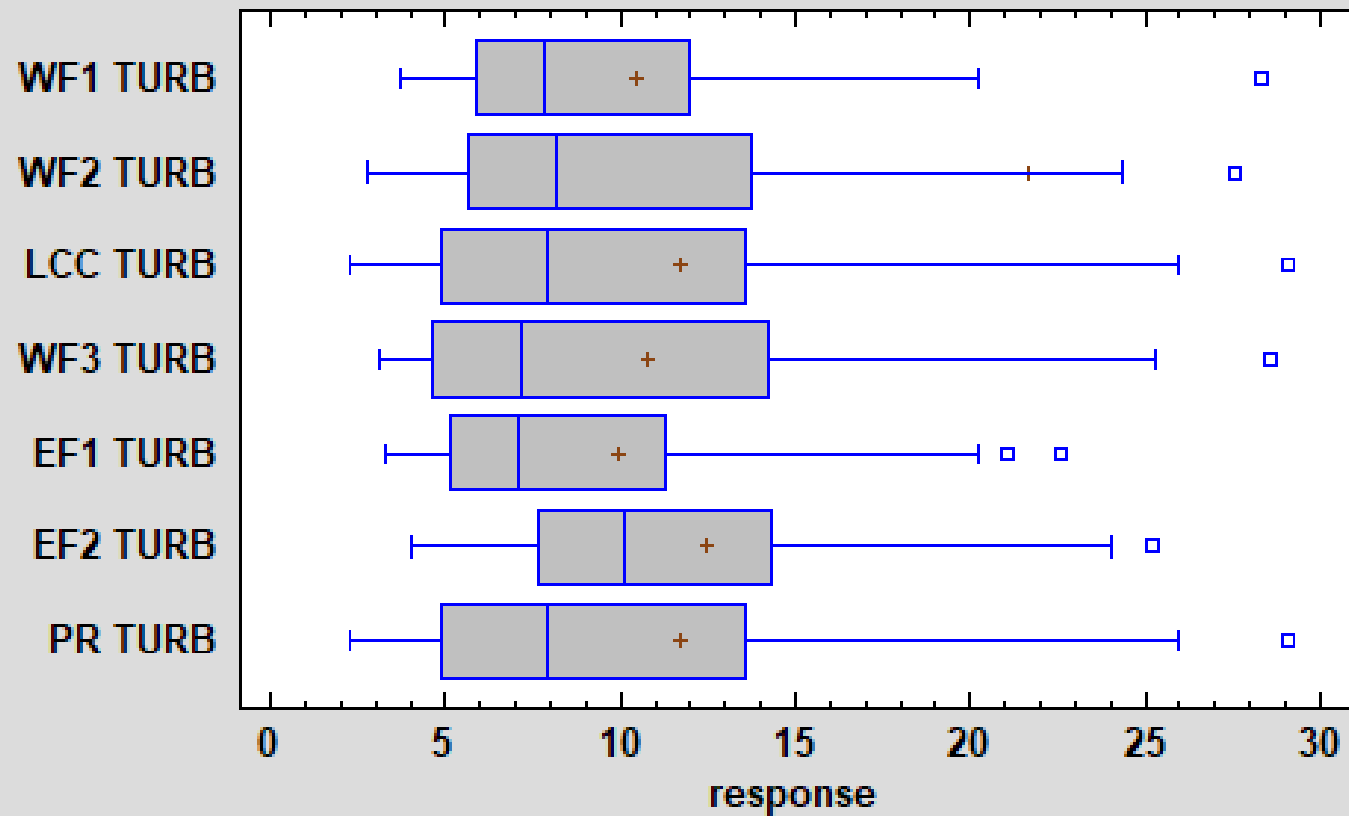
Lake Conway Point Removed Turbidity



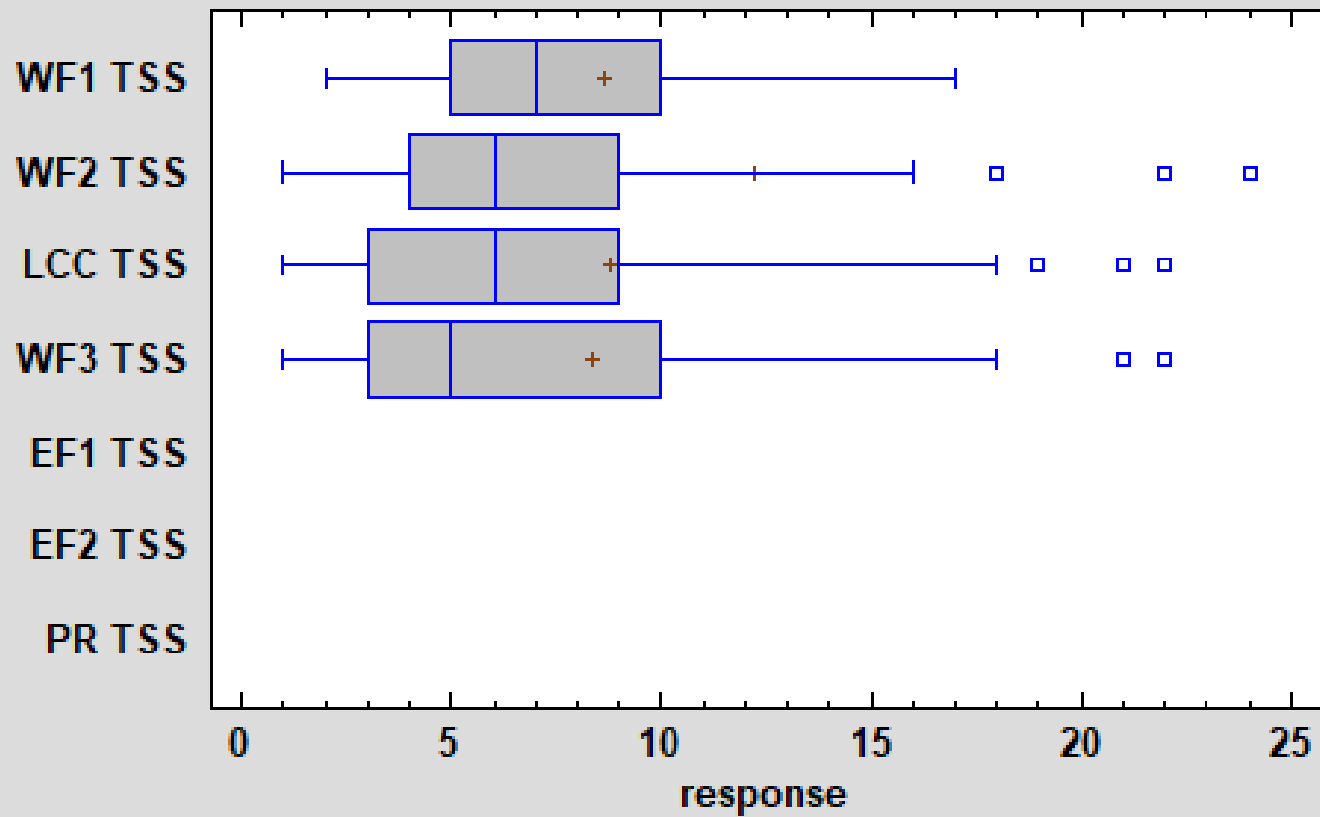
Lake Conway Point Removed Turbidity



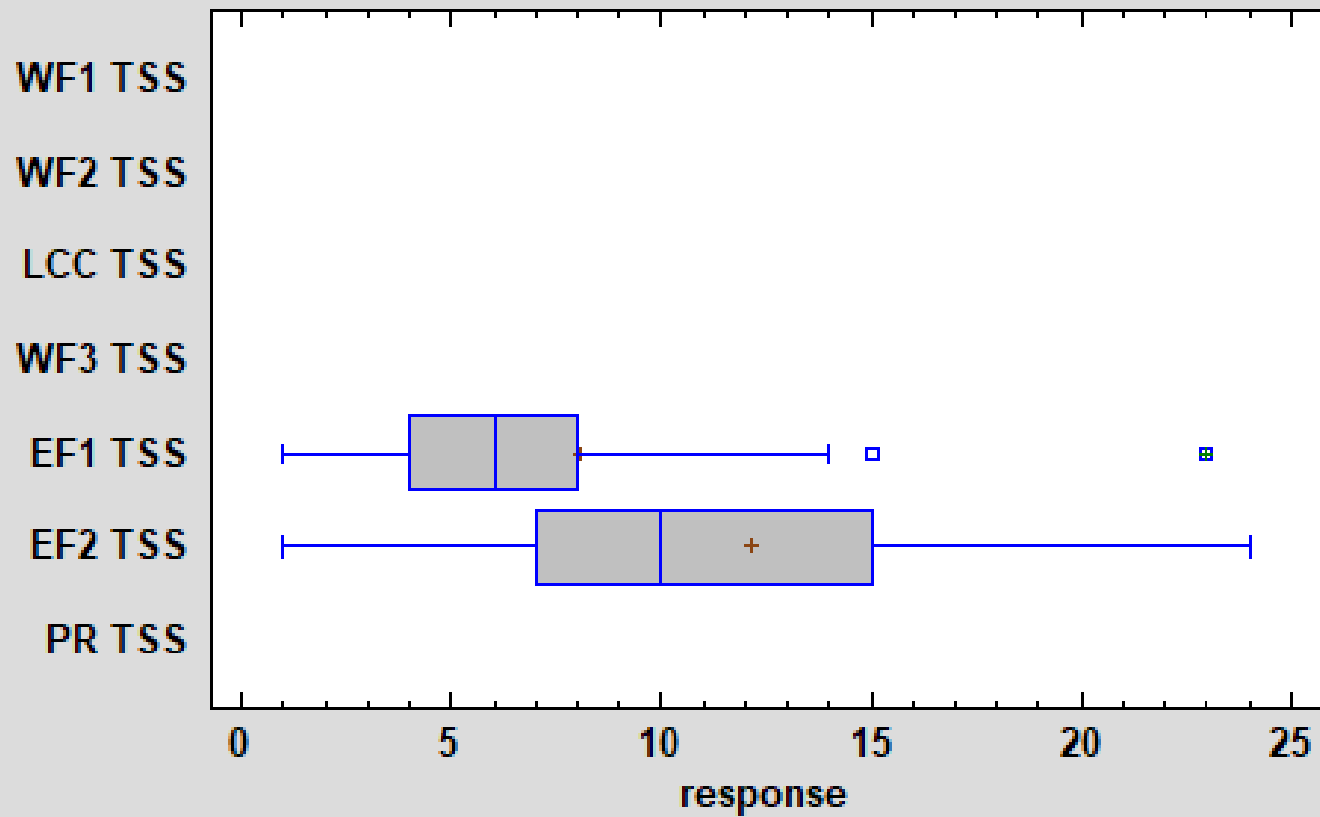
Lake Conway Point Removed Turbidity



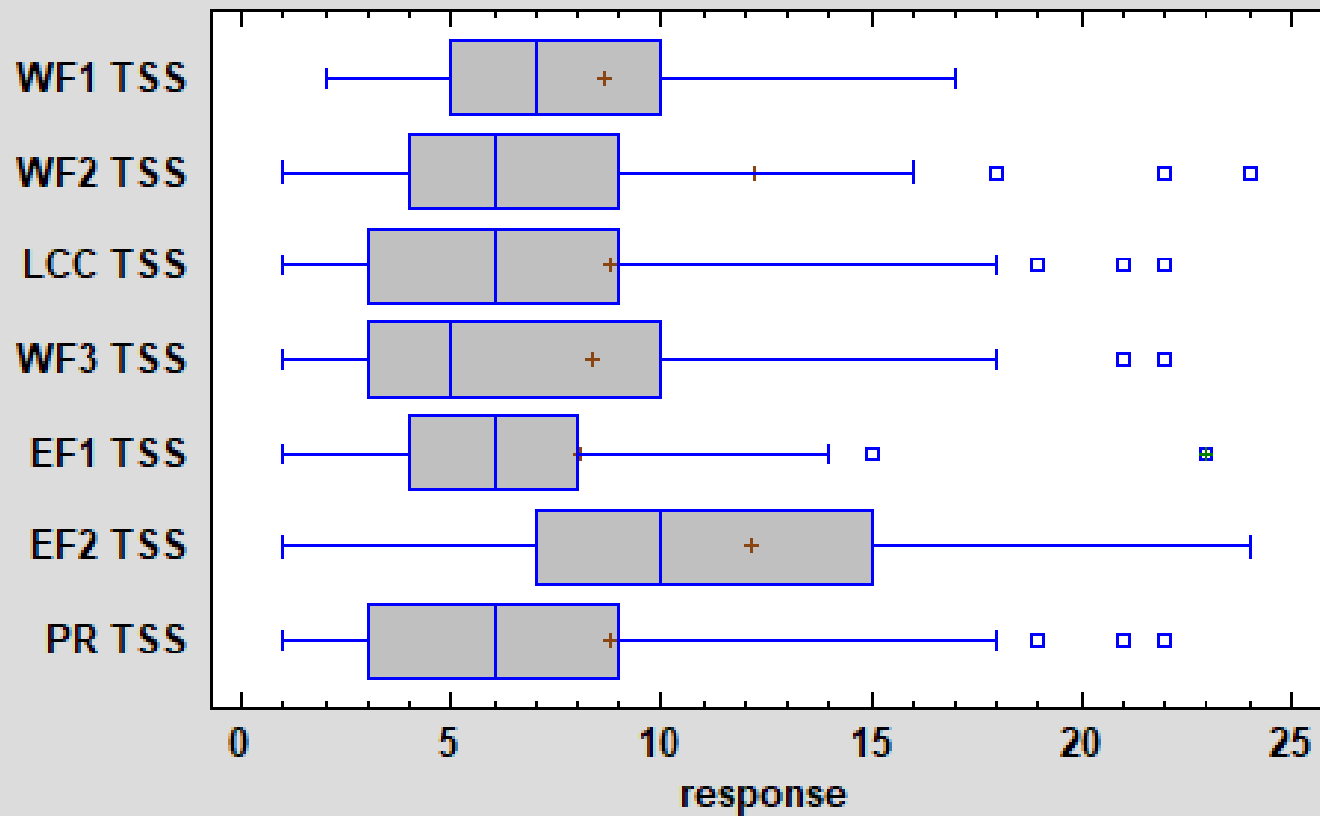
Lake Conway Point Removed TSS

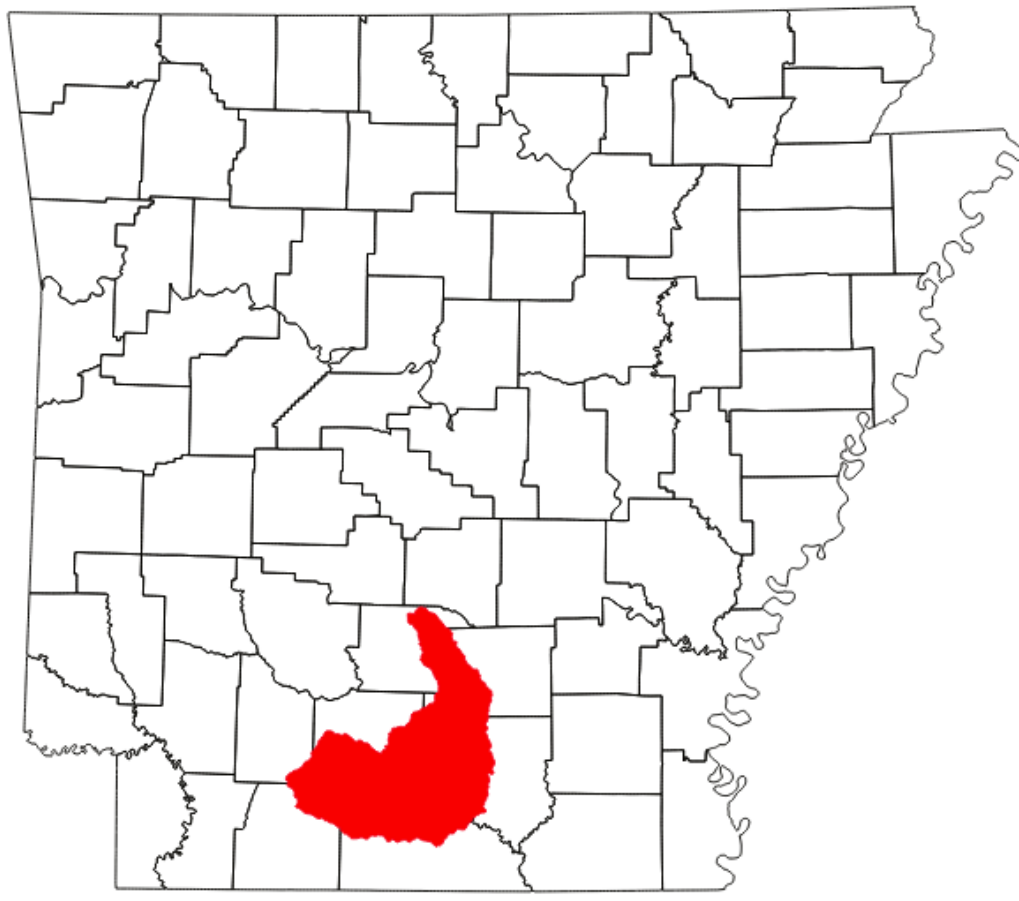


Lake Conway Point Removed TSS



Lake Conway Point Removed TSS

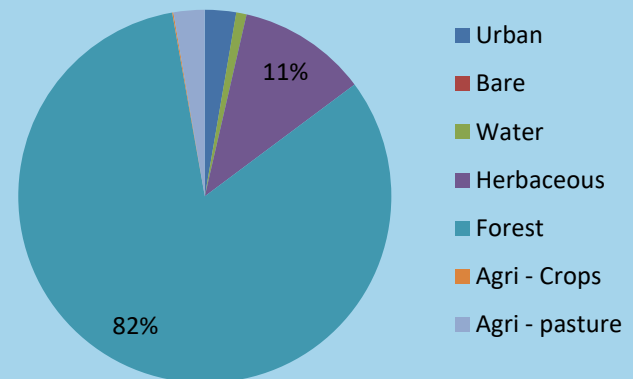




Lower Ouachita – Smackover Watershed

Focused on the “outfalls” of 12 digit HUC

Lower Ouachita – Smackover HUC



- Portions of the Lower Ouachita –Smackover HUC have been included on the Arkansas 303(d) list for not supporting aquatic life and drinking water designated uses and has been on each subsequent 303(d) list.
- ANRC has designated the watershed as a priority watershed.



Lower Ouachita - Smackover

Bryant Creek

Guice Creek

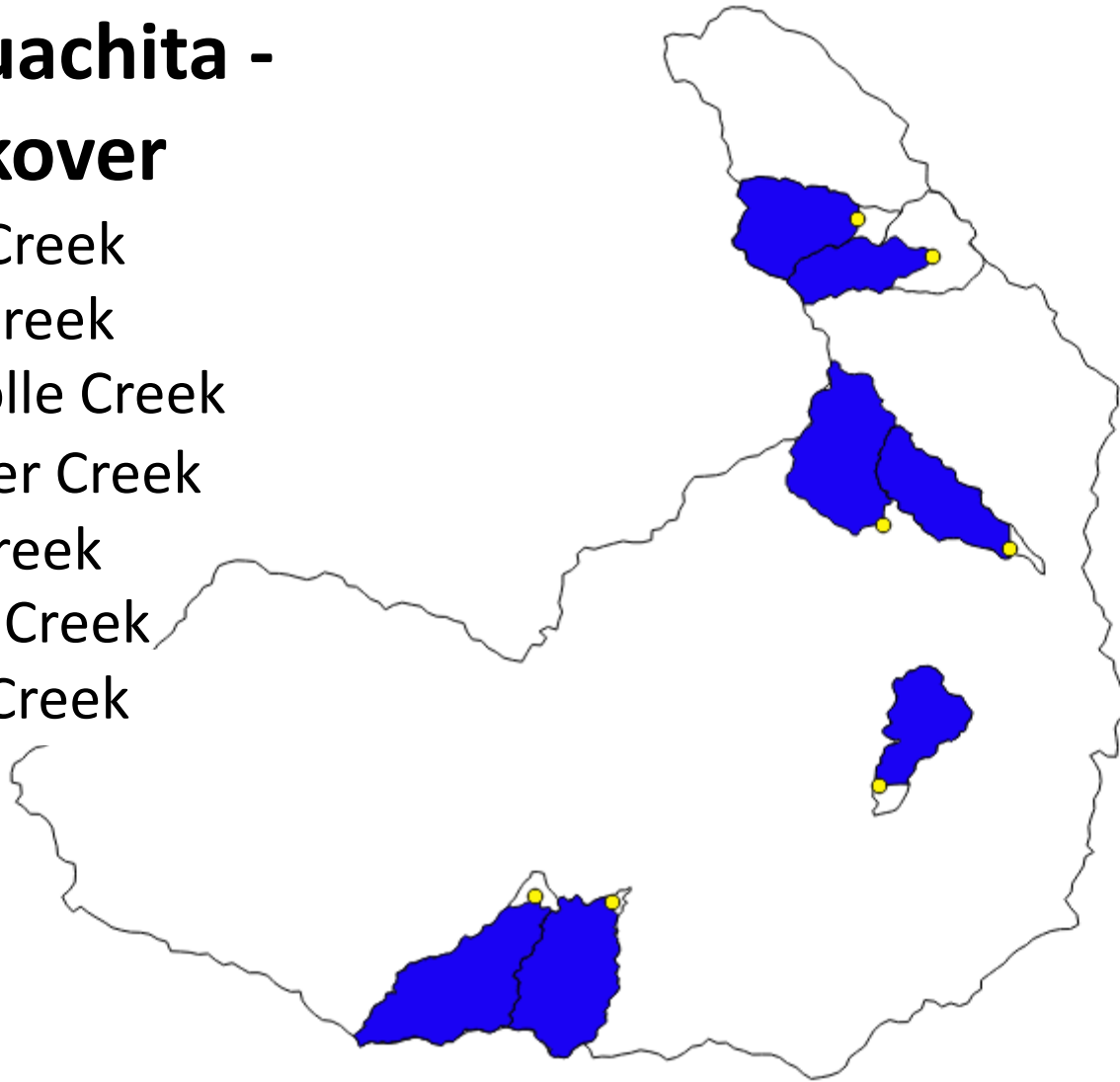
Champagnolle Creek

Whitewater Creek

Loyd Creek

Holmes Creek

Sandy Creek



Lower Ouachita - Smackover

Bryant Creek

Guice Creek

Champagnolle Creek

Whitewater Creek

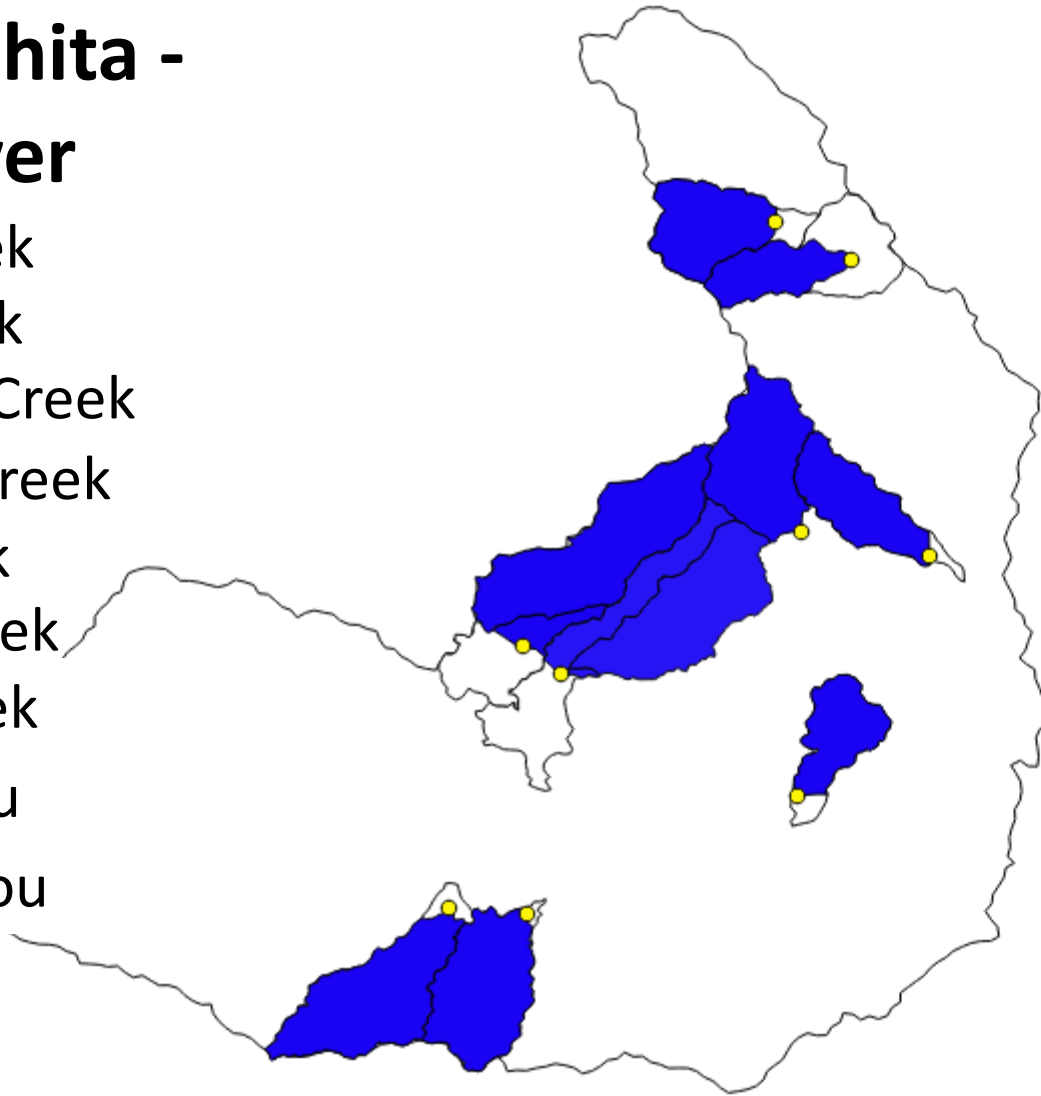
Loyd Creek

Holmes Creek

Sandy Creek

Two Bayou

Locust Bayou



Lower Ouachita - Smackover

Bryant Creek

Guice Creek

Champagnolle Creek

Whitewater Creek

Loyd Creek

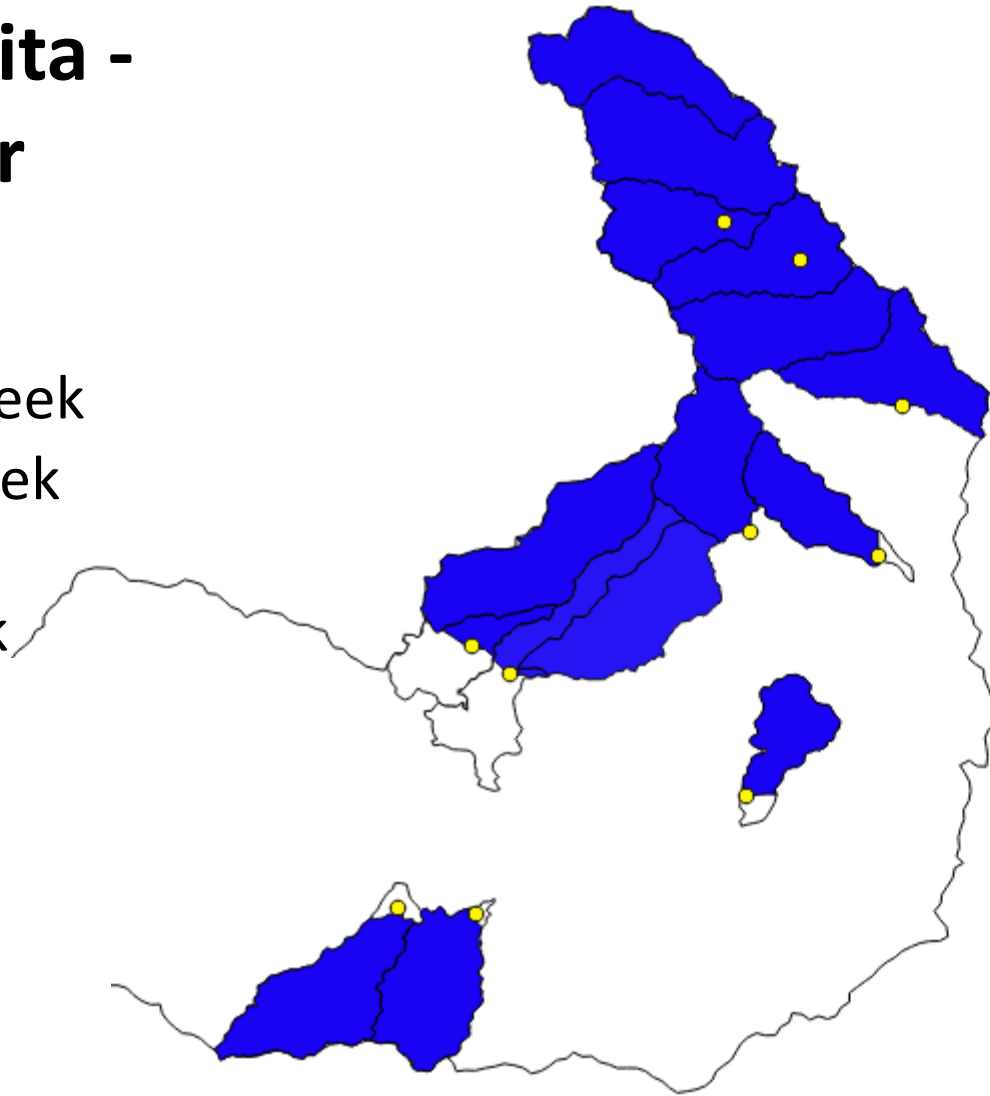
Holmes Creek

Sandy Creek

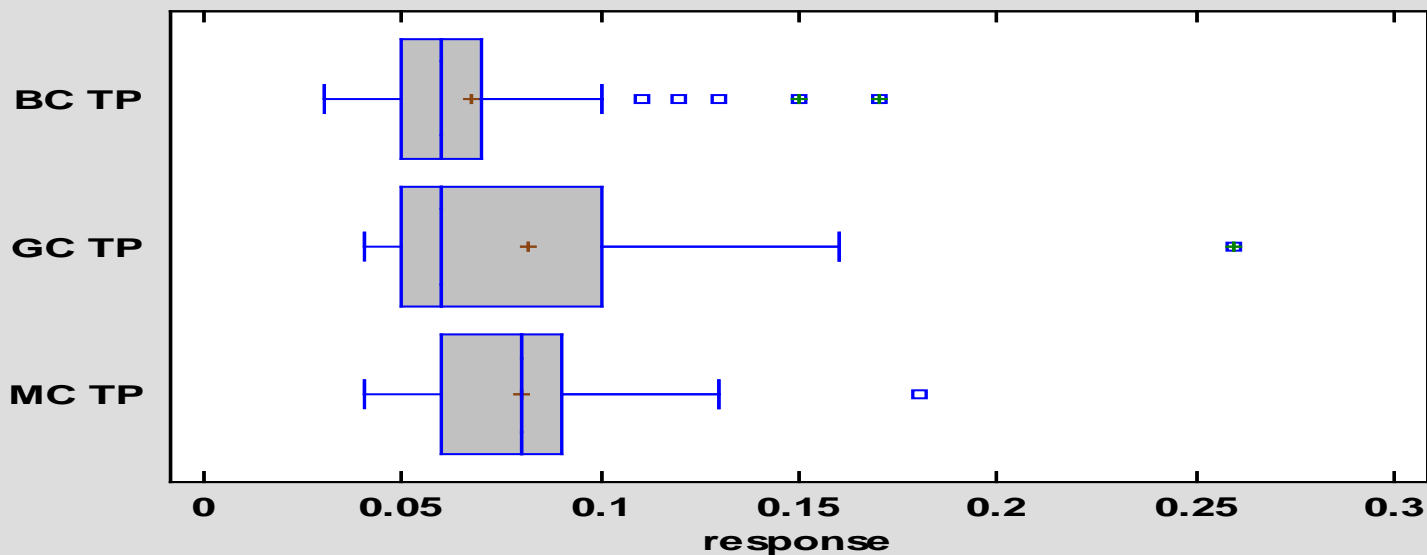
Two Bayou

Locust Bayou

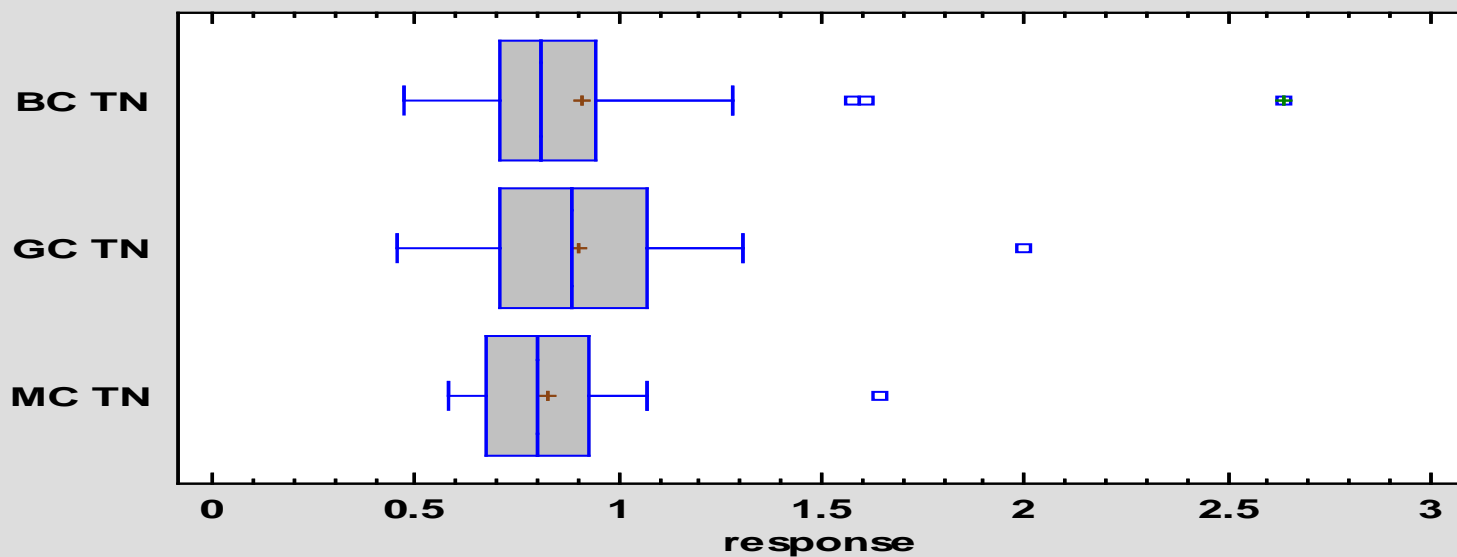
Moro Creek



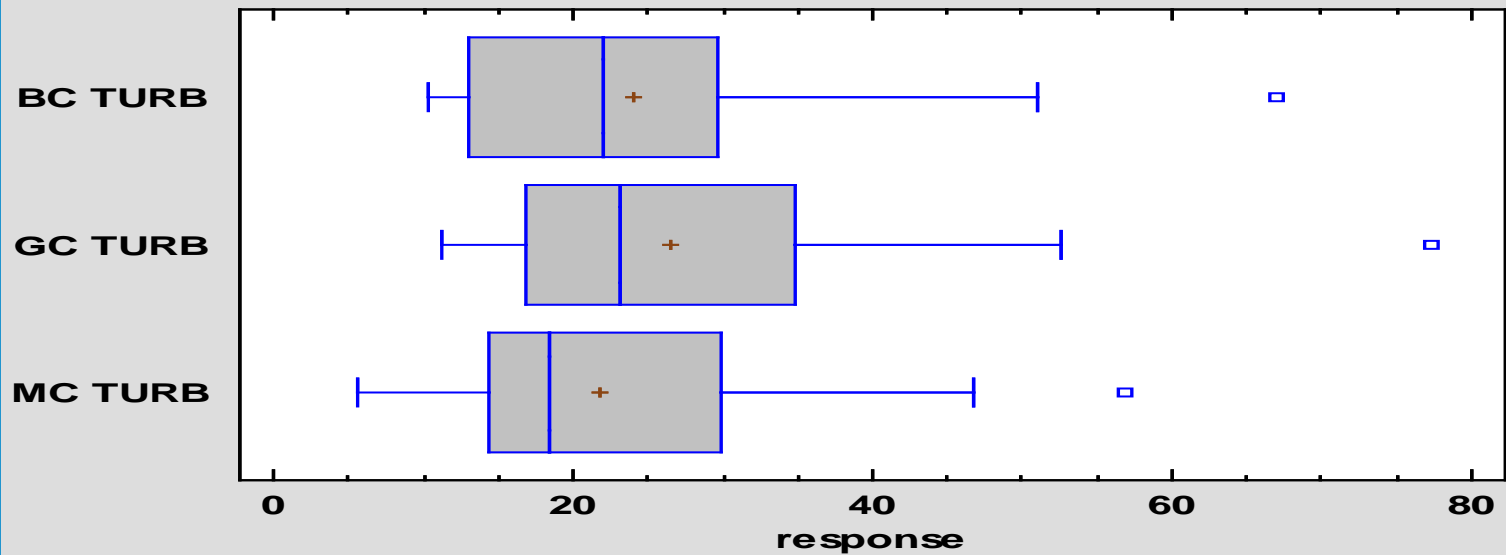
Lower Ouachita - Smackover Total Phosphorus



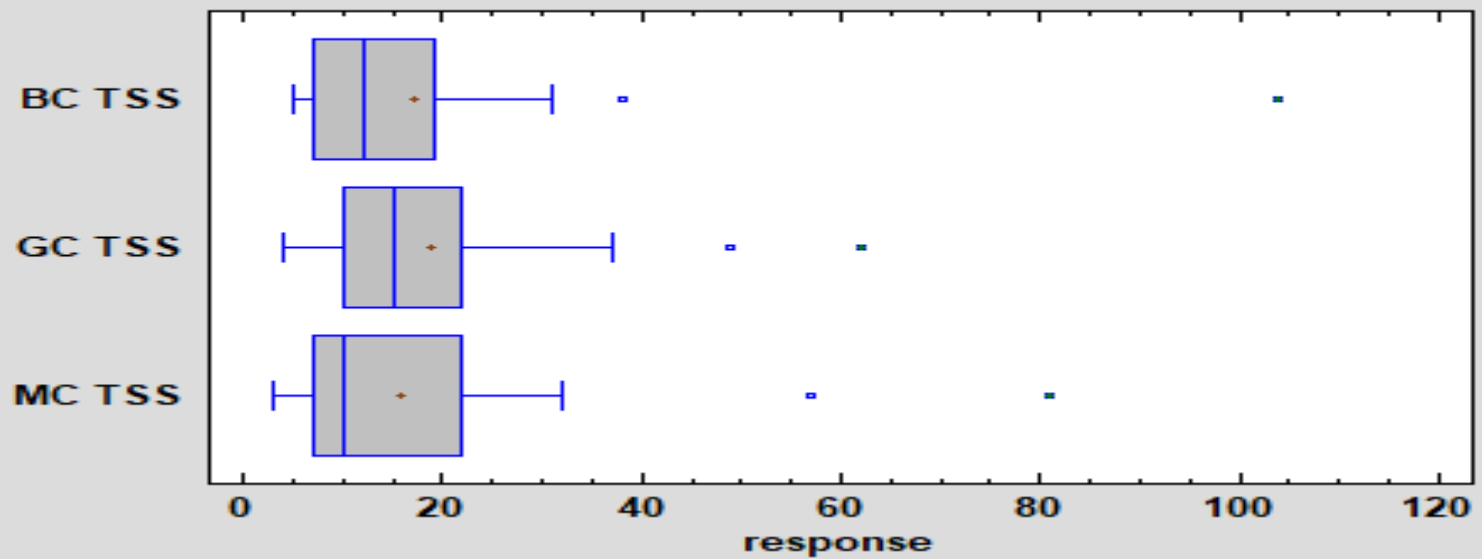
Lower Ouachita - Smackover Total Nitrogen



Lower Ouachita - Smackover Turbidity

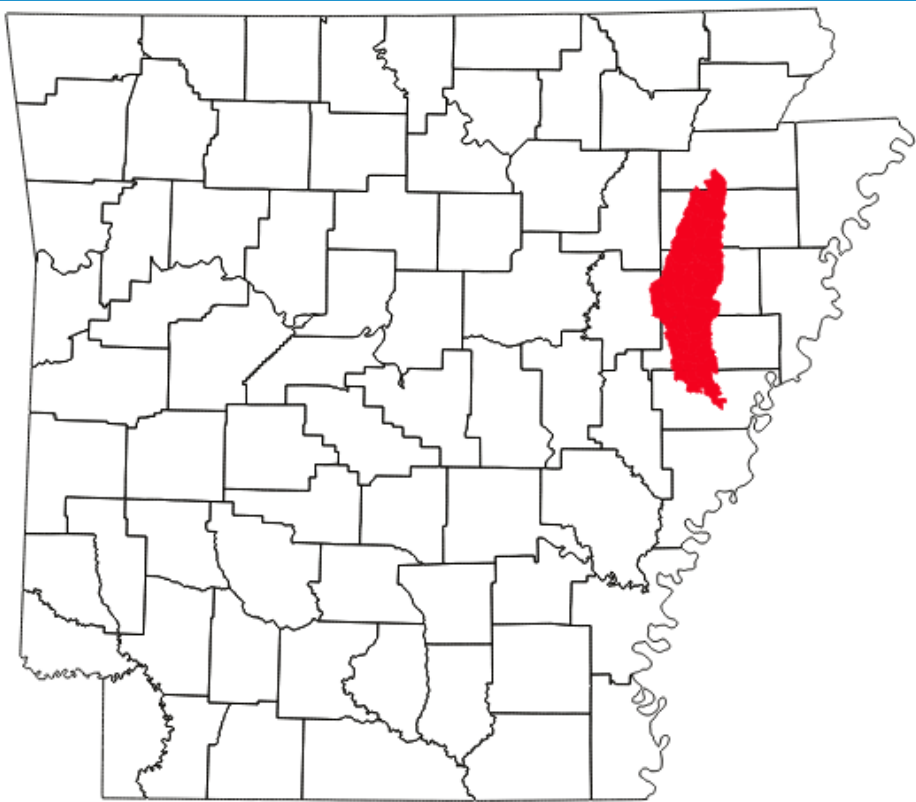


Lower Ouachita - Smackover TSS

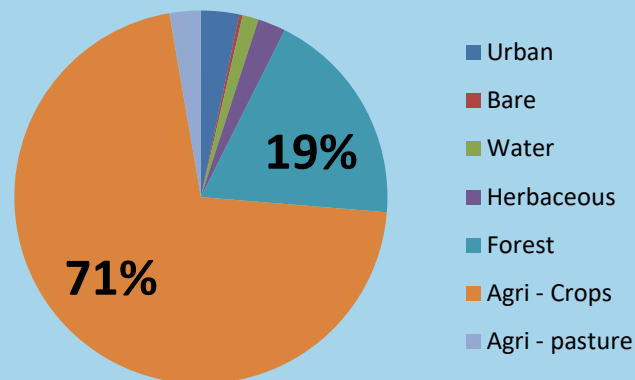


L'Anguille River Watershed

Focused on the “outfalls” of
12 digit HUC



L'Anguille Watershed

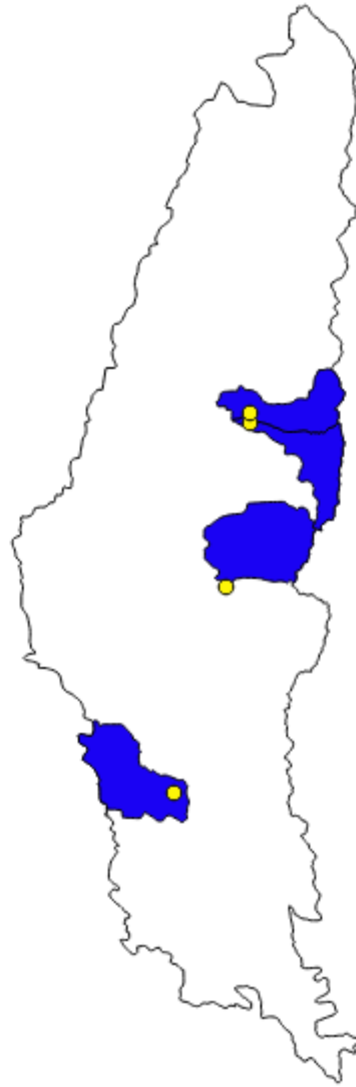


- The L'Anguille River was included on the Arkansas 1998 303(d) list for not supporting aquatic life due to siltation/turbidity and has been on each subsequent 303(d) list.
- ANRC has designated the watershed as a priority watershed.
- NRCS also identified the L'Anguille River as a priority in the Mississippi River Basin Healthy Watershed Initiative.



L'Anguille River

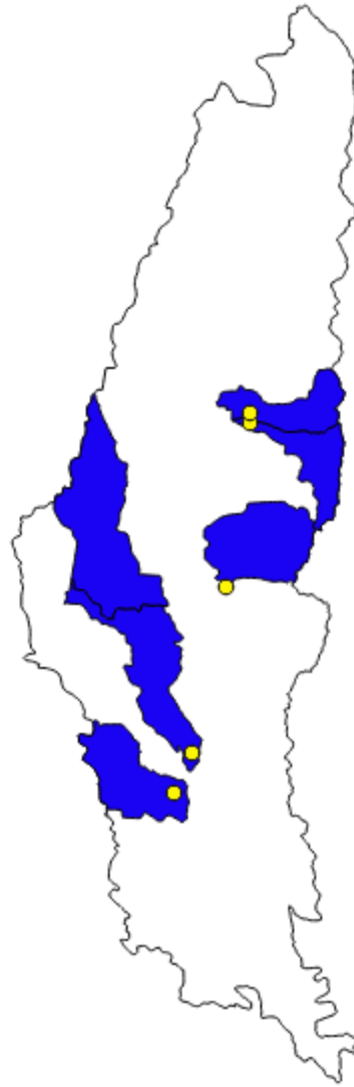
Copper Creek
Prairie Creek
Indian Creek
Cypress Creek



0 40 miles

L'Anguille River

Copper Creek
Prairie Creek
Indian Creek
Cypress Creek
First Creek



0 40 miles

L'Anguille River

Copper Creek

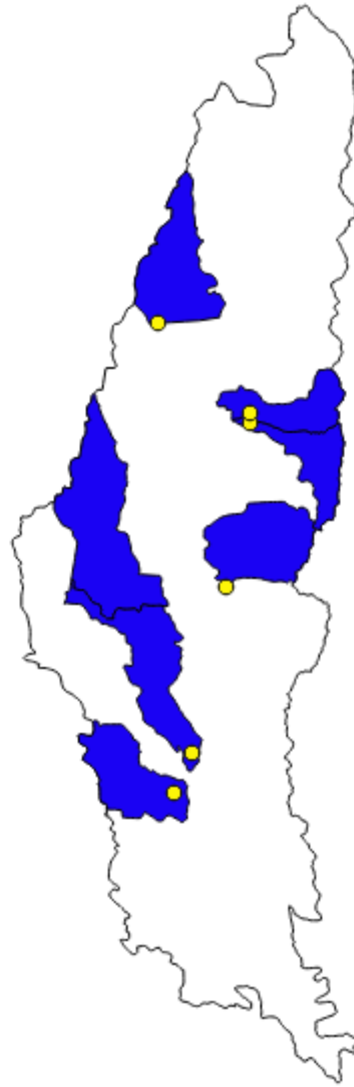
Prairie Creek

Indian Creek

Cypress Creek

First Creek

Upper Brushy Creek



0 40 miles

L'Anguille River

Copper Creek

Prairie Creek

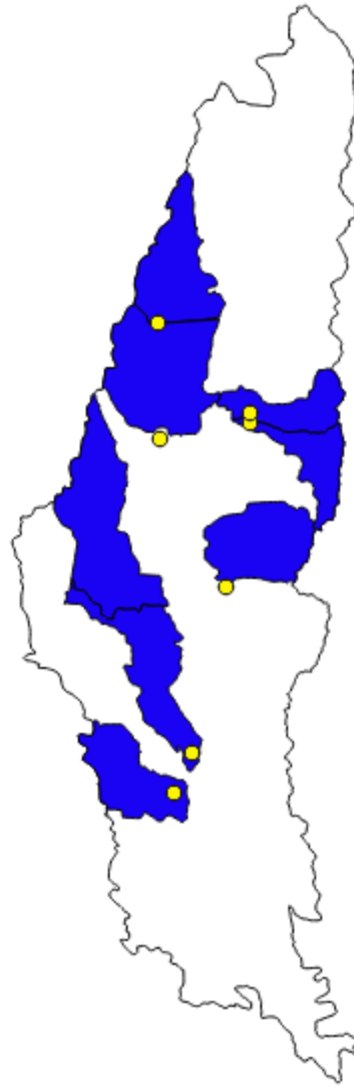
Indian Creek

Cypress Creek

First Creek

Upper Brushy Creek

Middle Brushy Creek



0 40 miles

L'Anguille River

Copper Creek

Prairie Creek

Indian Creek

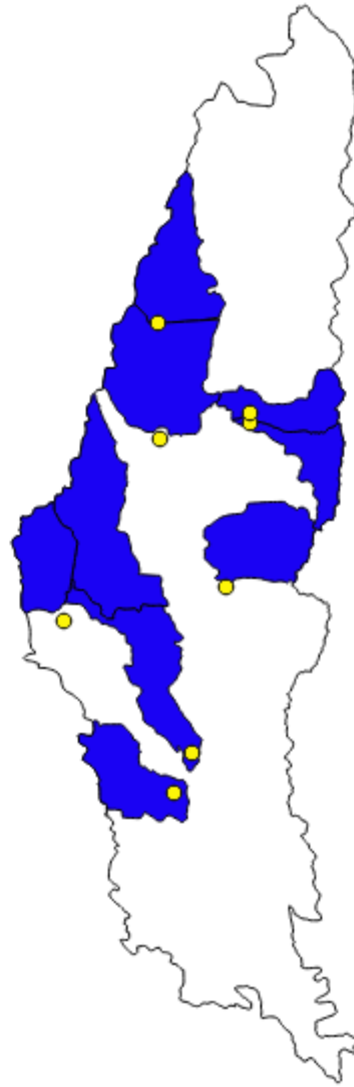
Cypress Creek

First Creek

Upper Brushy Creek

Middle Brushy Creek

Upper Second Creek



0 40 miles

L'Anguille River

Copper Creek

Prairie Creek

Indian Creek

Cypress Creek

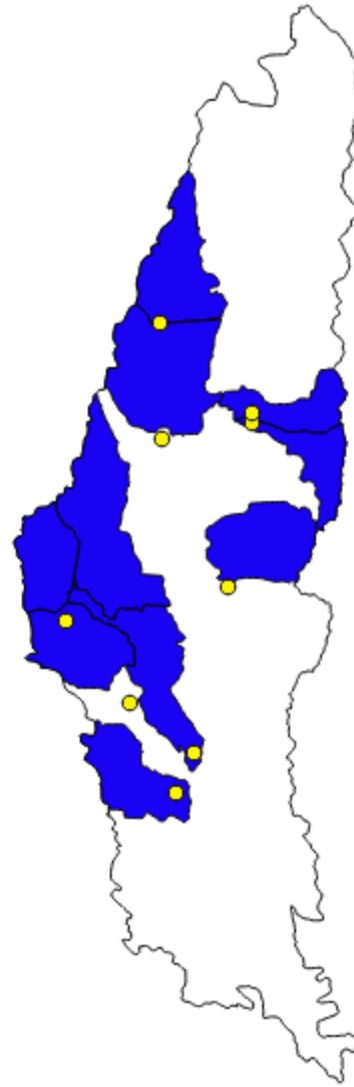
First Creek

Upper Brushy Creek

Middle Brushy Creek

Upper Second Creek

Middle Second Creek



0 40 miles

L'Anguille River

Copper Creek

Prairie Creek

Indian Creek

Cypress Creek

First Creek

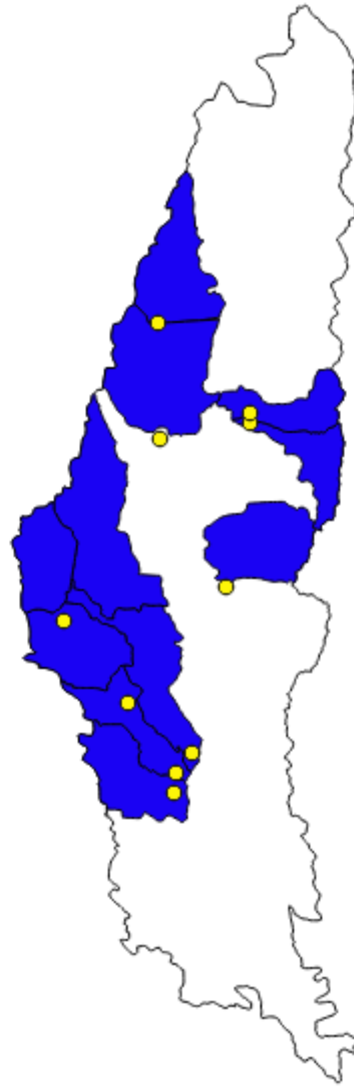
Upper Brushy Creek

Middle Brushy Creek

Upper Second Creek

Middle Second Creek

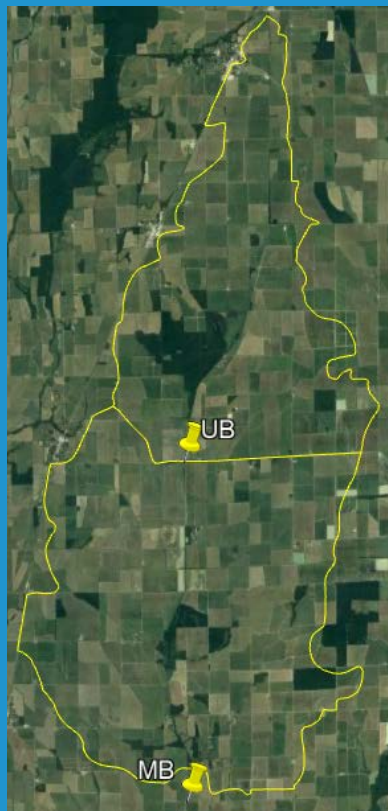
Lower Second Creek



0 40 miles

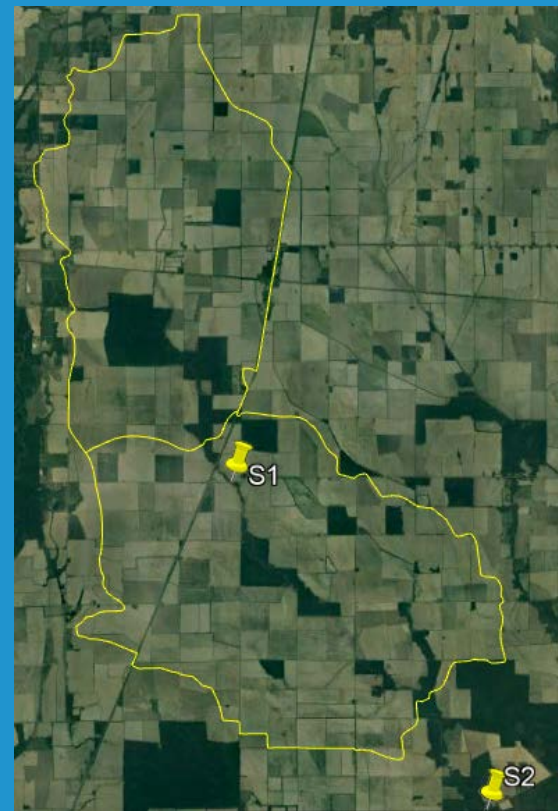
Upper
Brushy
Creek

Middle
Brushy
Creek

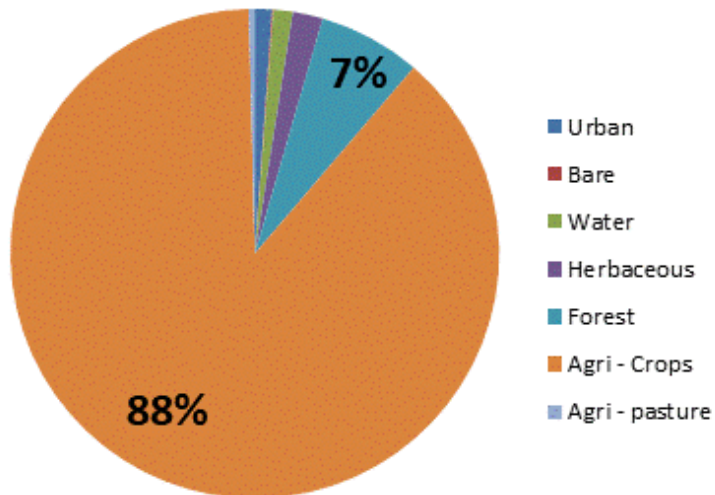


Upper
Second
Creek

Middle
Second
Creek

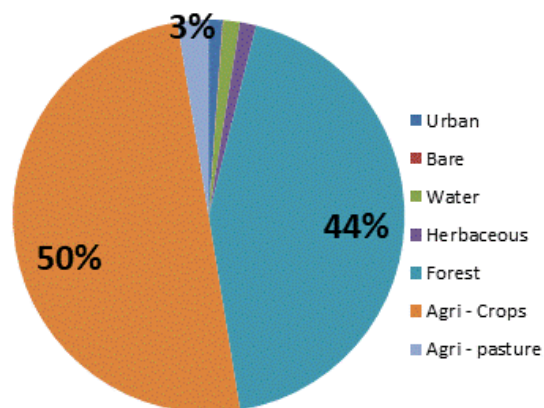


Upper and Middle Brushy Creek Watersheds



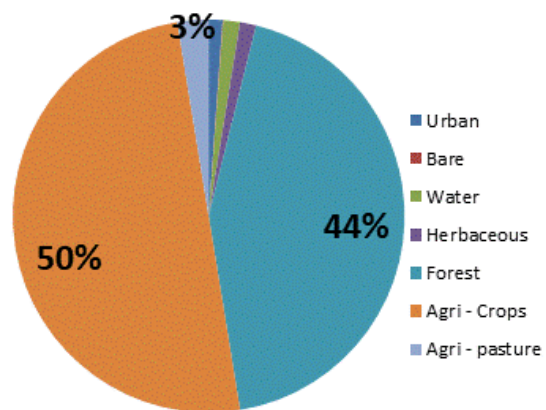
Lower Second Creek

Lower Second Creek Watershed

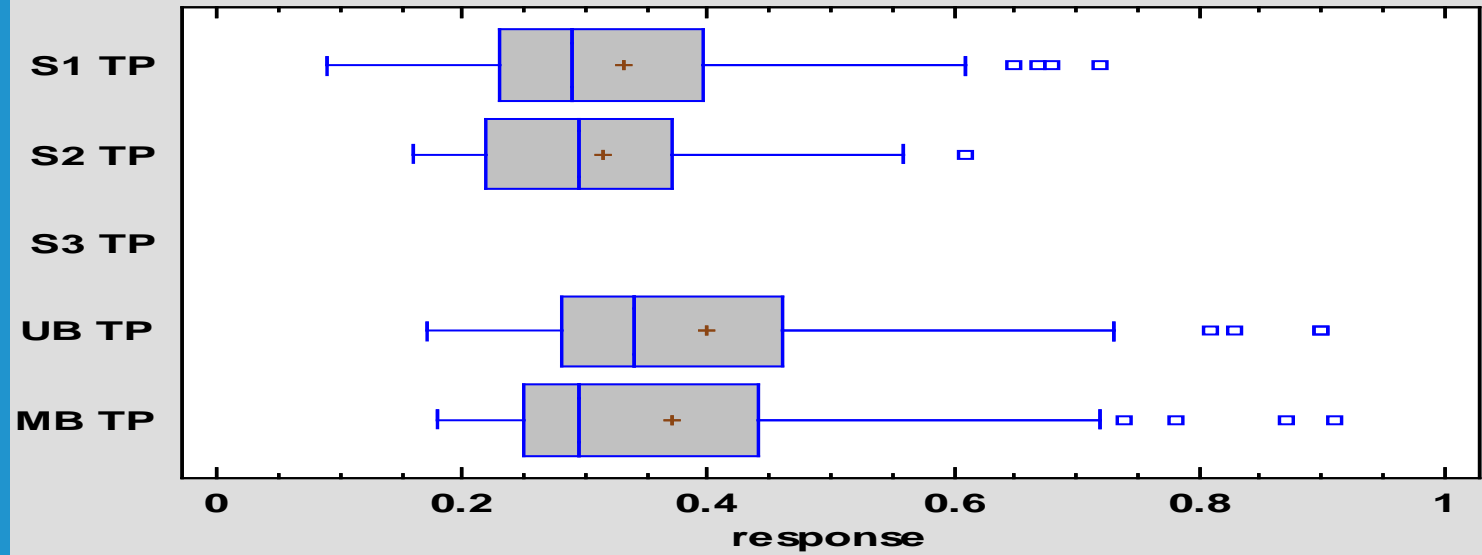


Lower Second Creek

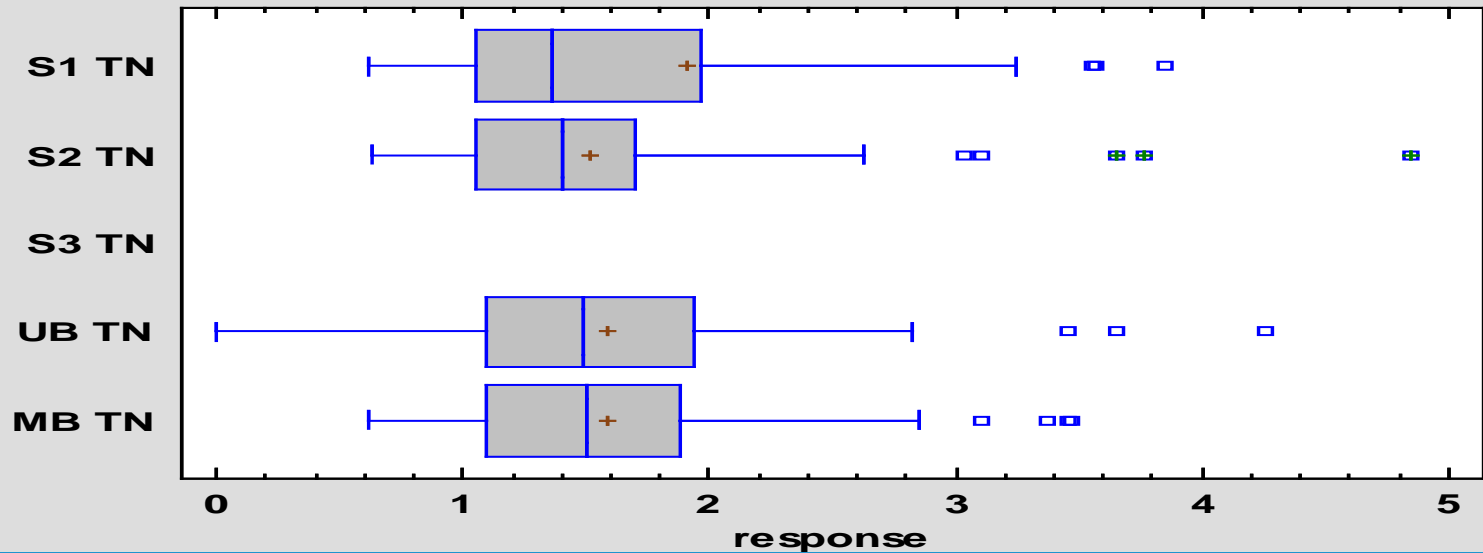
Lower Second Creek Watershed



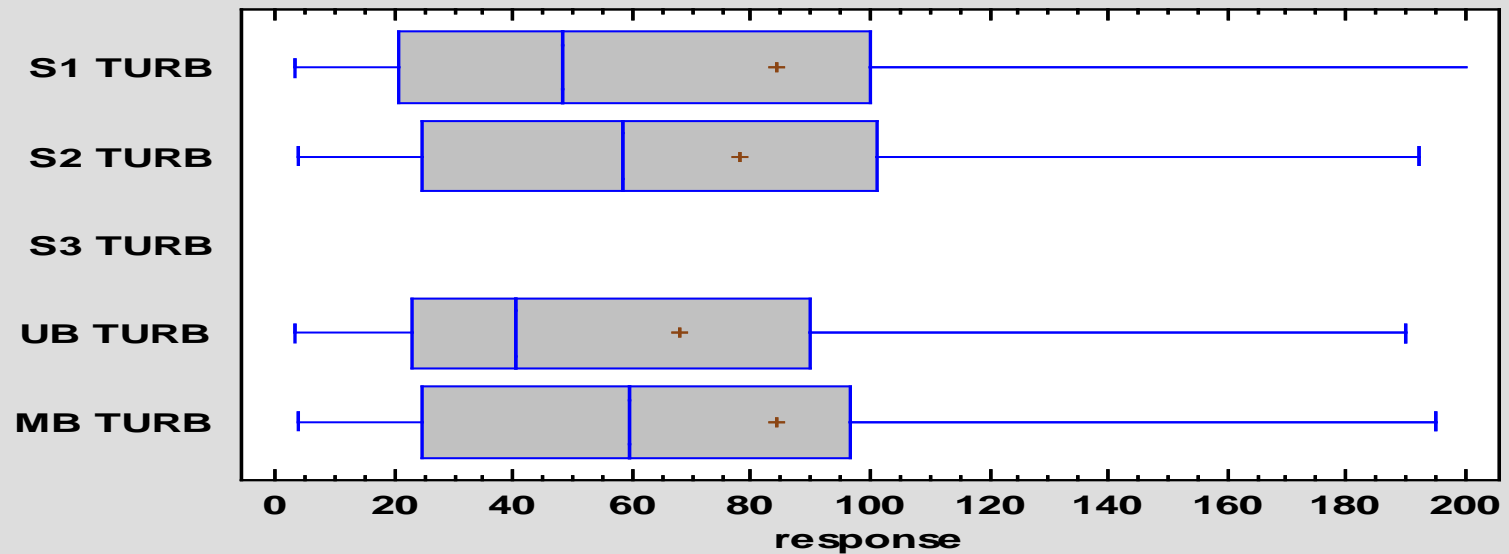
L'Anguille Watershed Total Phosphorus



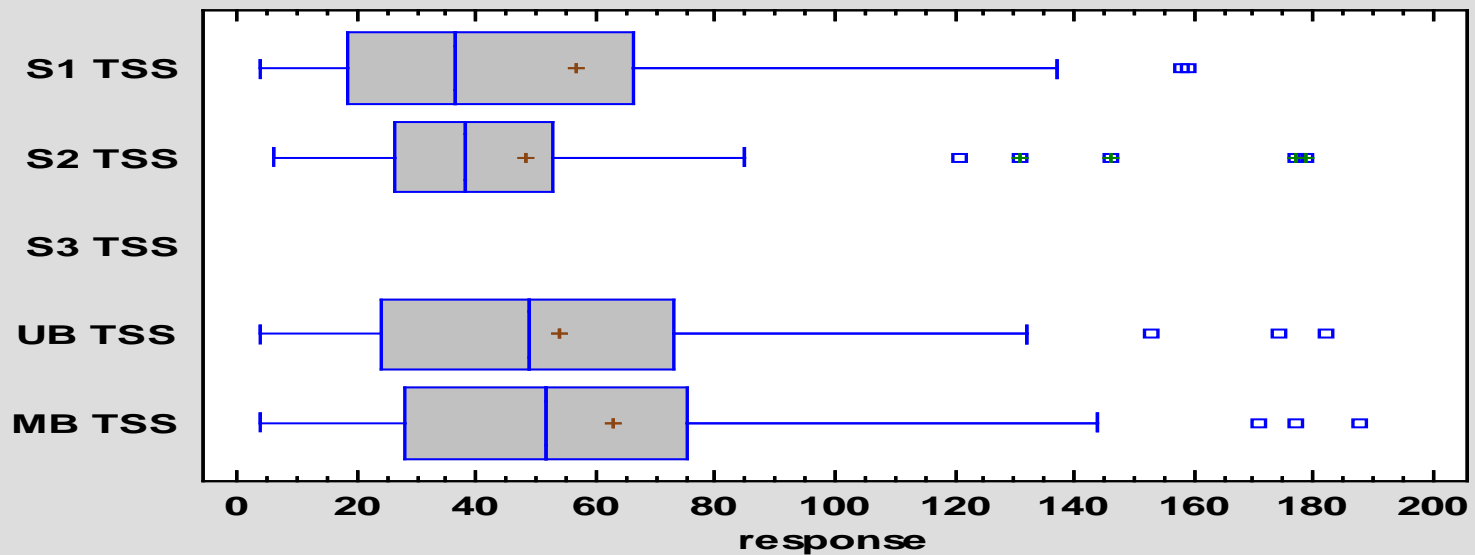
L'Anguille Watershed Total Nitrogen



L'Anguille Watershed Turbidity



L'Anguille Watershed TSS



Thank You



www.equilibrium-ar.org