

Middle Cache River Monitoring 13-5000

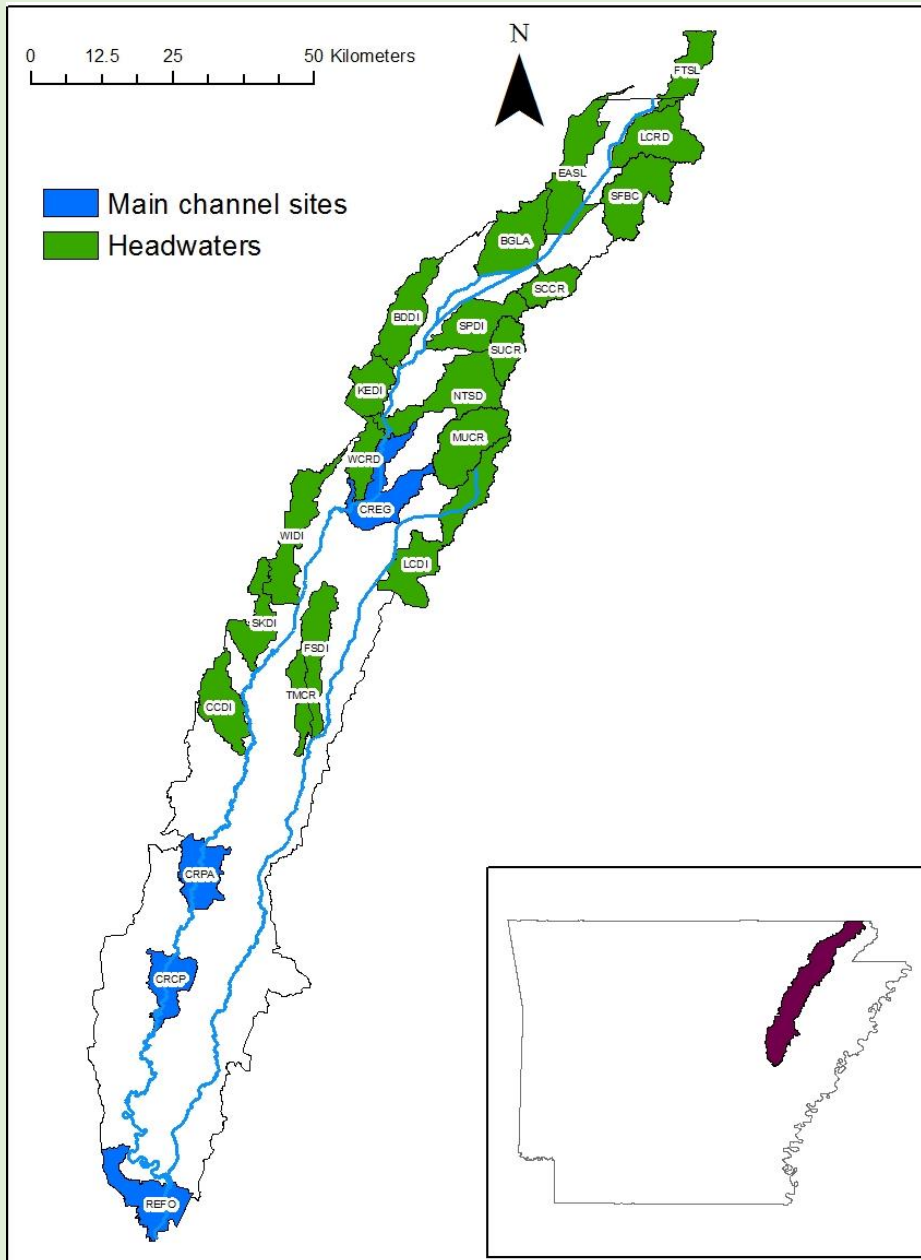
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Arkansas State University



Background

- Primarily agricultural land use
- Channelization in upper Cache River
 - Lower Cache River less channelized
- Less agricultural use along Crowley's Ridge





19 subwatersheds

- Headwater subwatersheds
- No upstream input
- Sampled at subwatershed outflow

4 main channel sites

- Including point of confluence with White River at Clarendon, AR

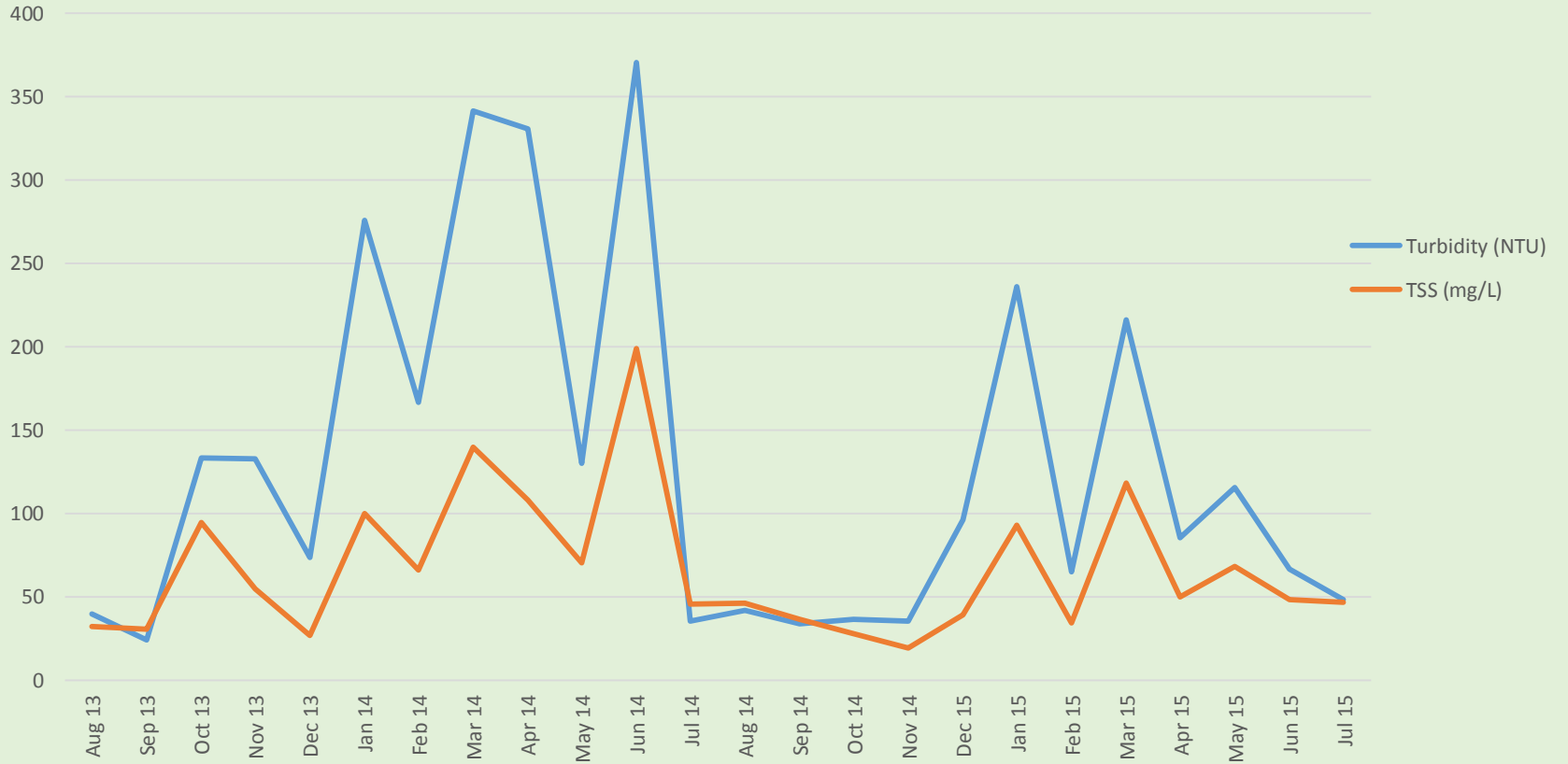
Monthly sampling – 3 years

- Began August 2013
- Data presented through July 2015

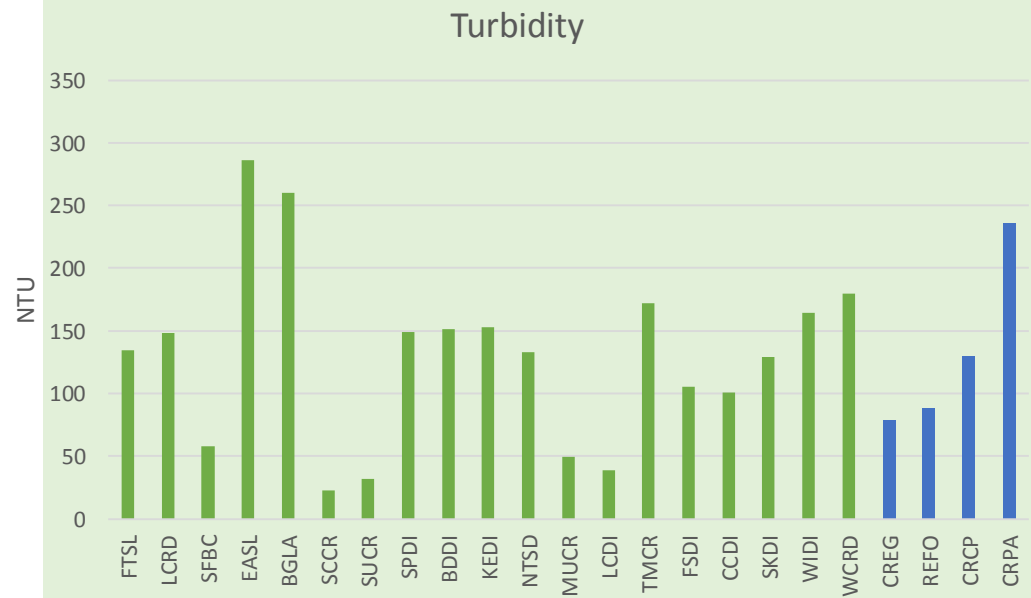
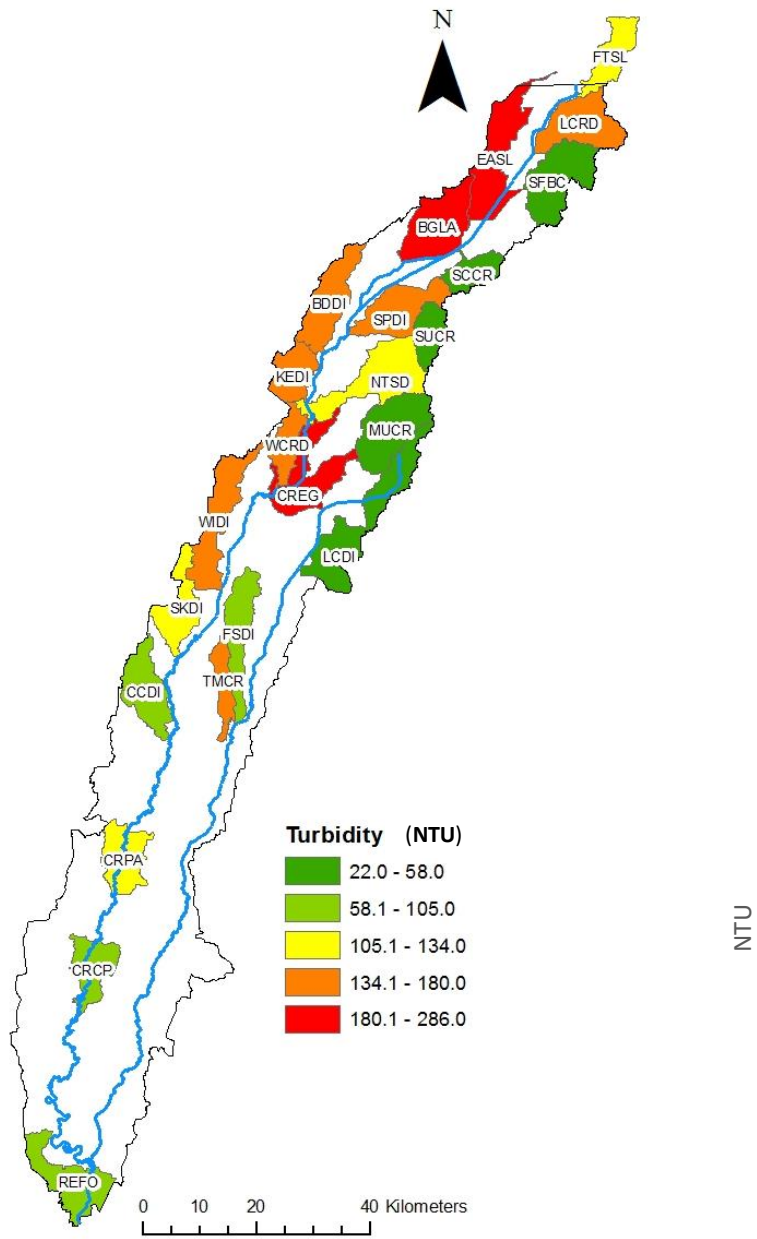
Dr. Dharmendra Saraswat

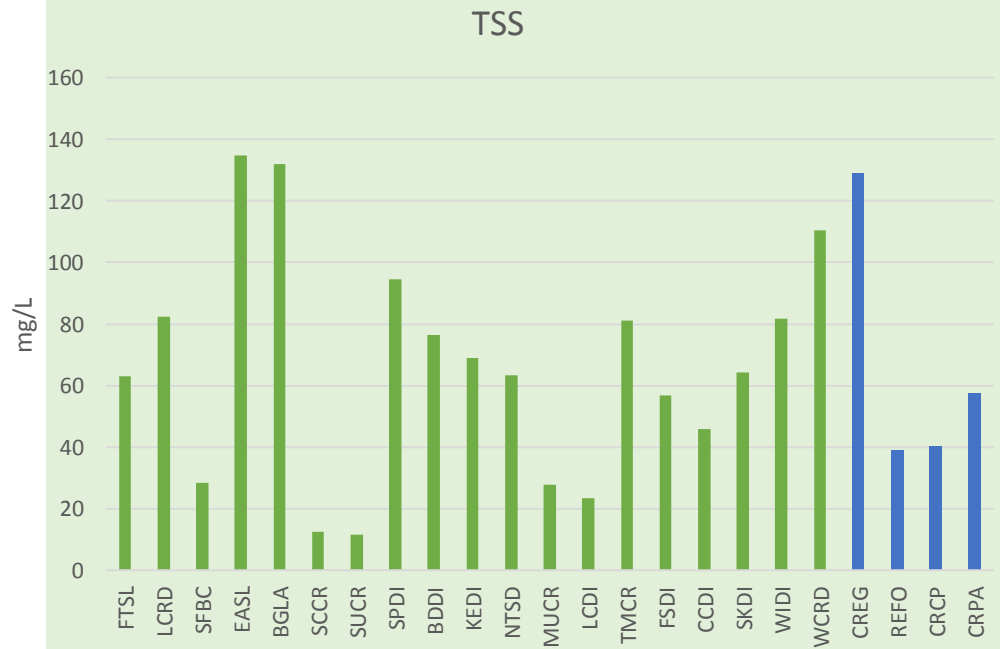
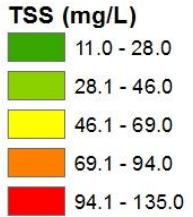
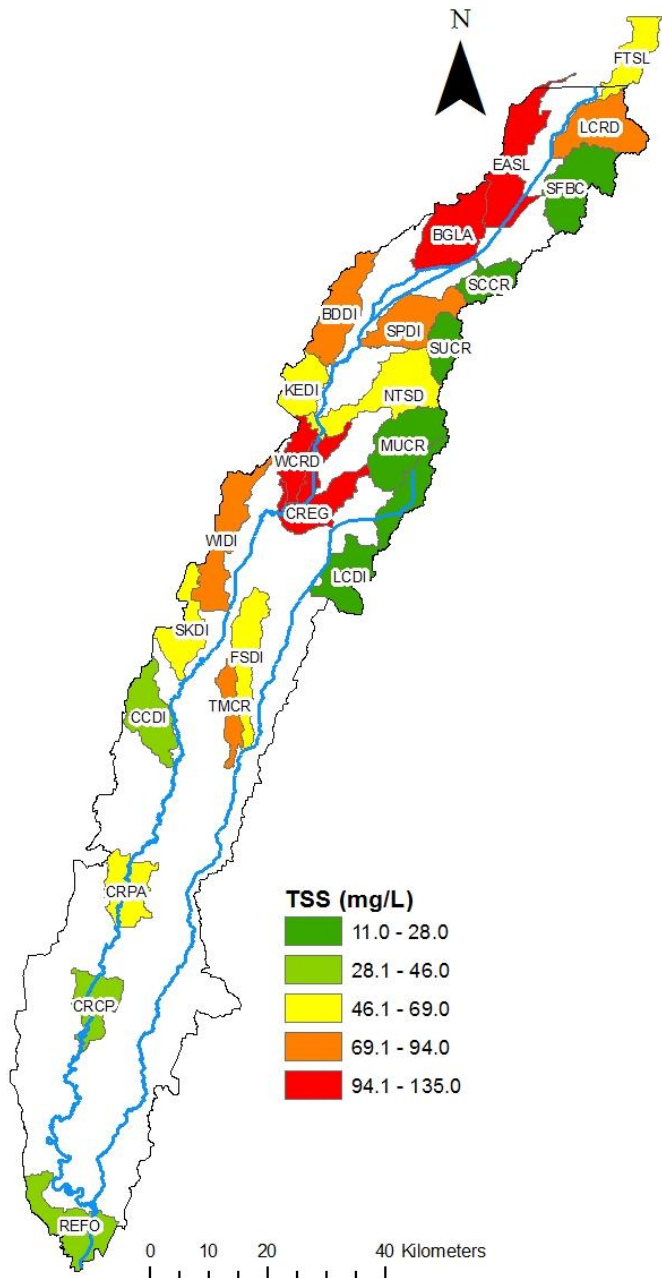
- Modeling of data from headwater subwatersheds

Mean Turbidity and TSS (Aug 2013-July 2015)

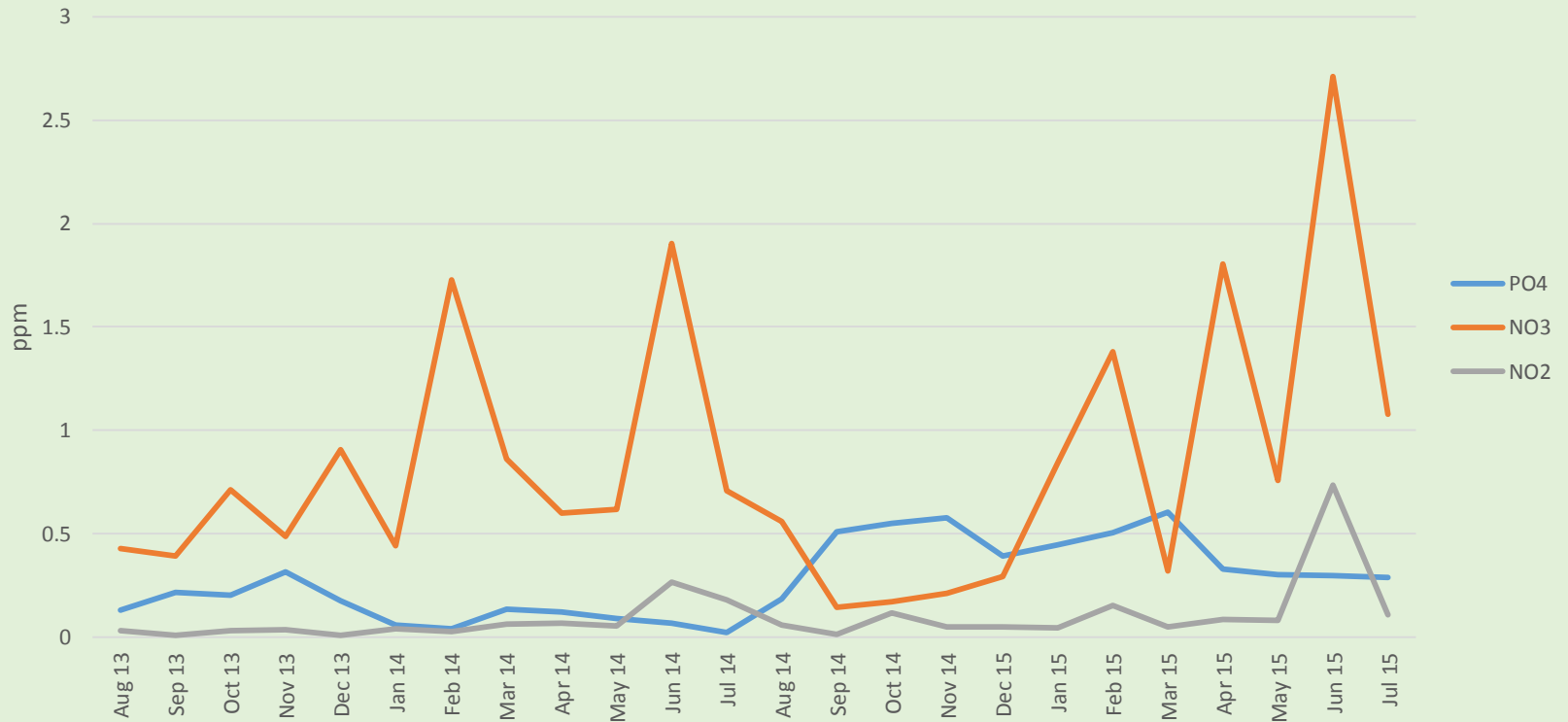


Mean Turbidity and TSS for all sites in Middle Cache River study

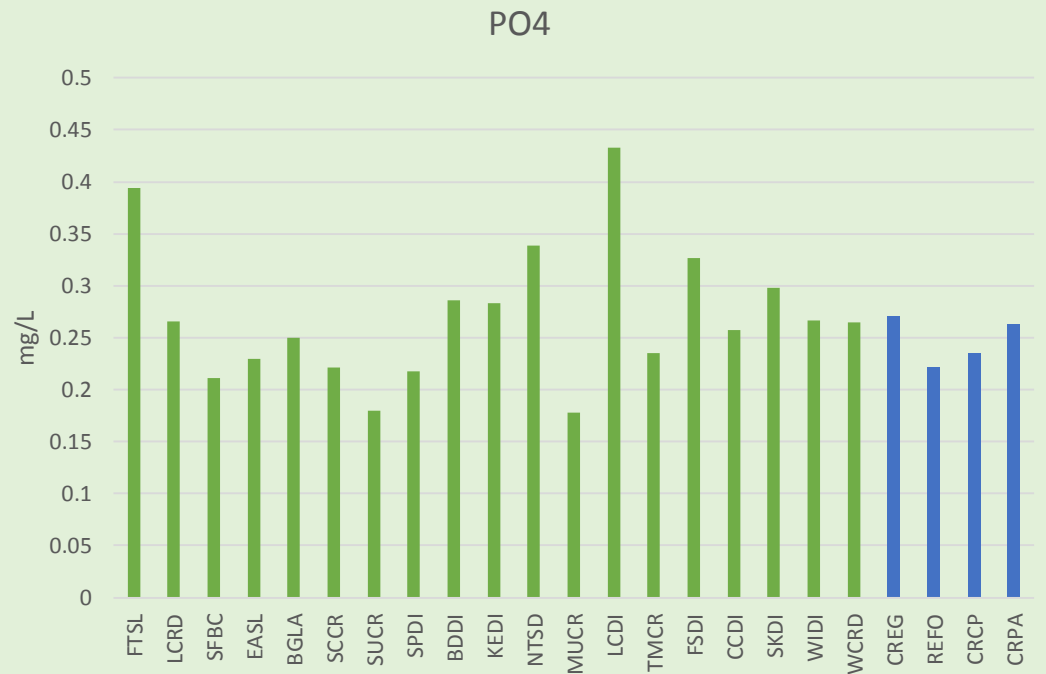
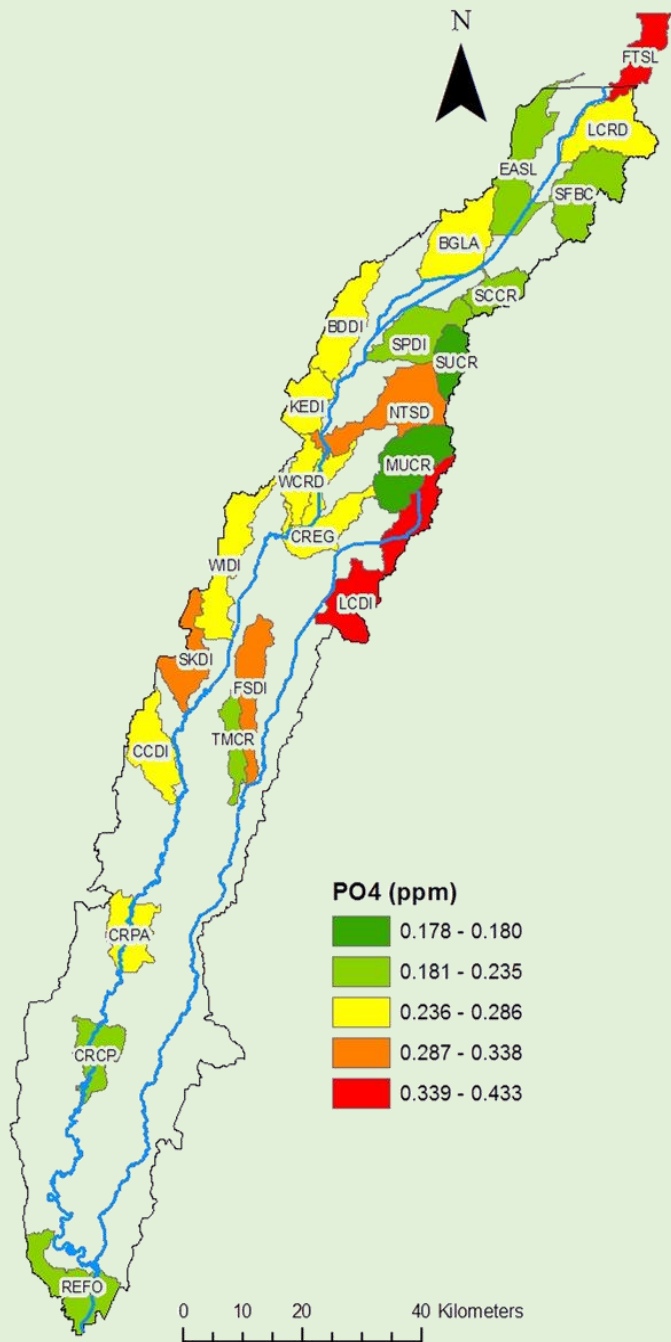


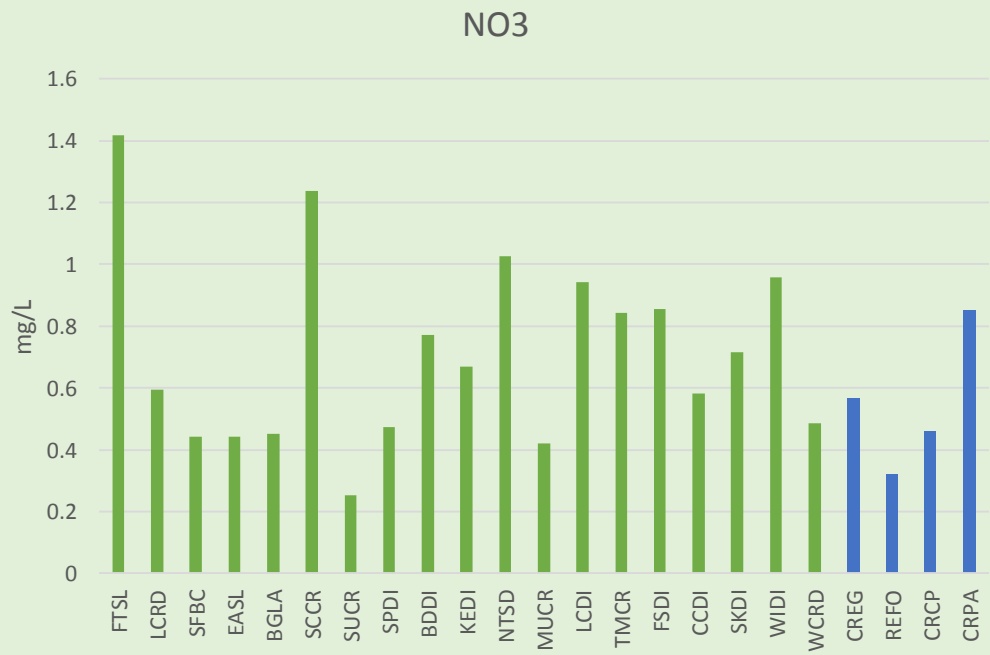
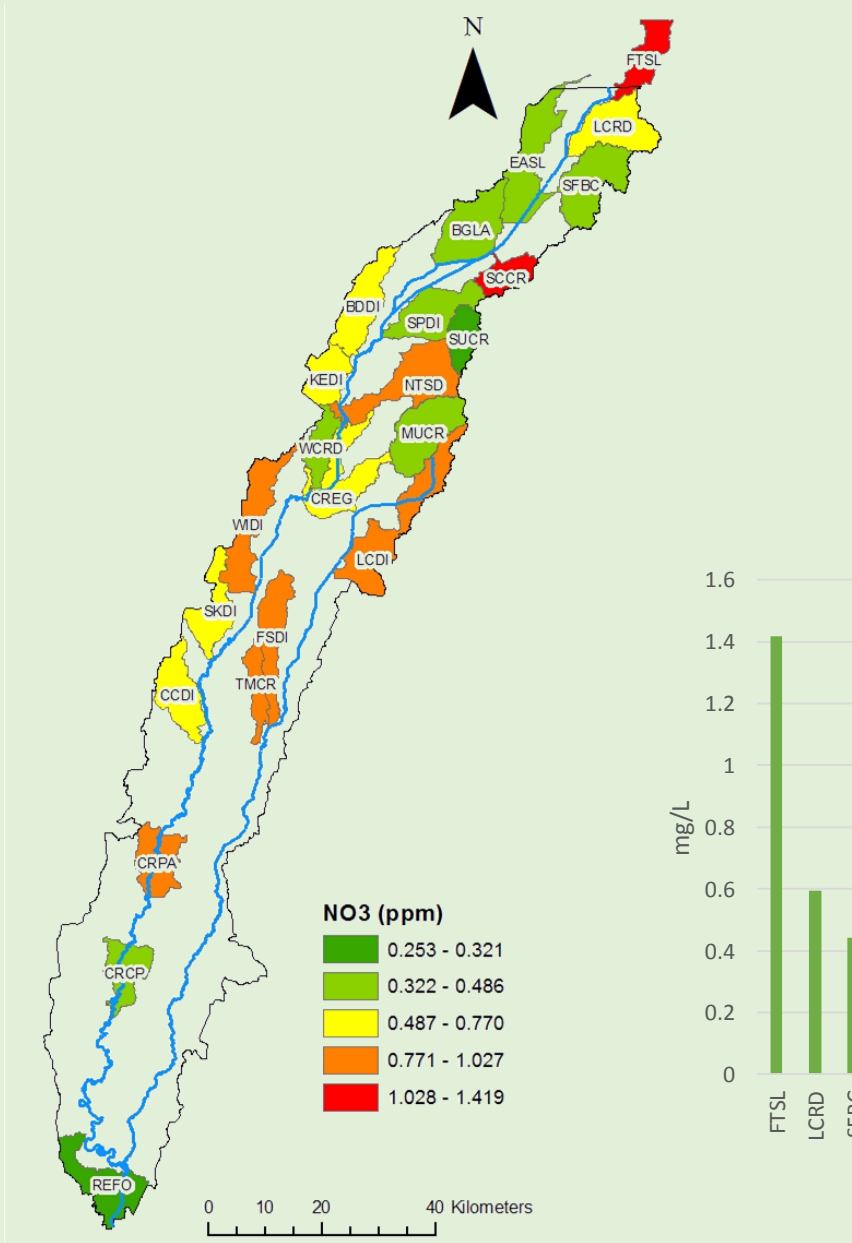


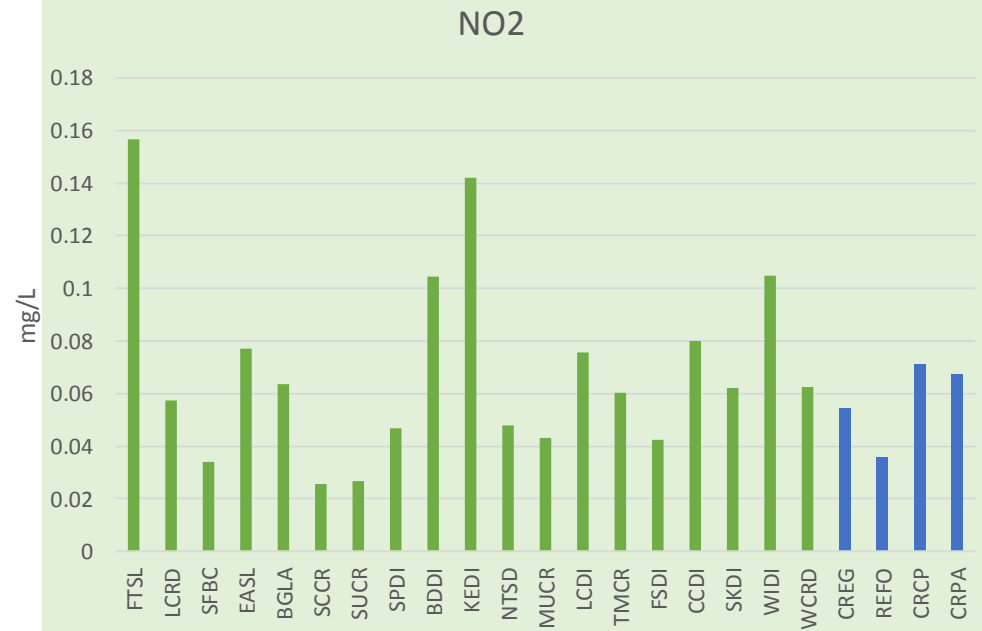
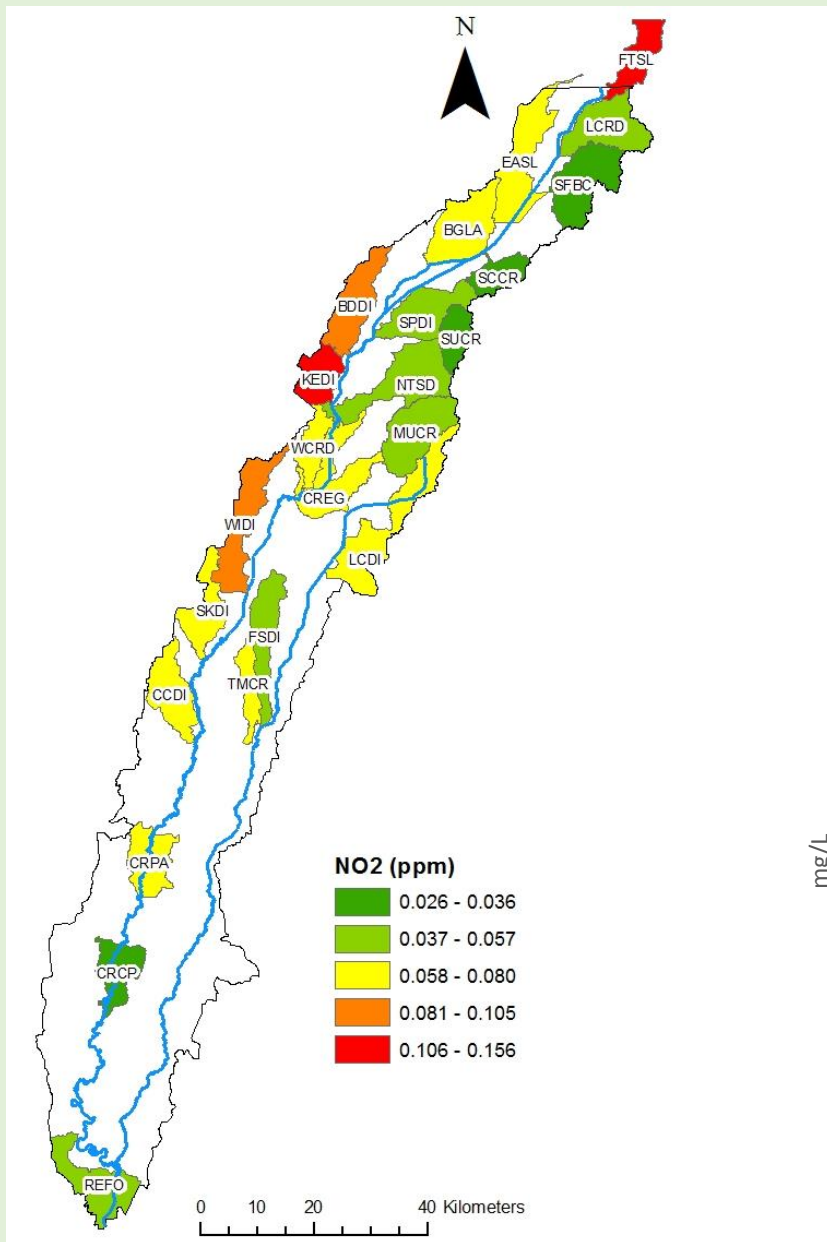
Mean Dissolved Nutrients (Aug 2013-July 2015)



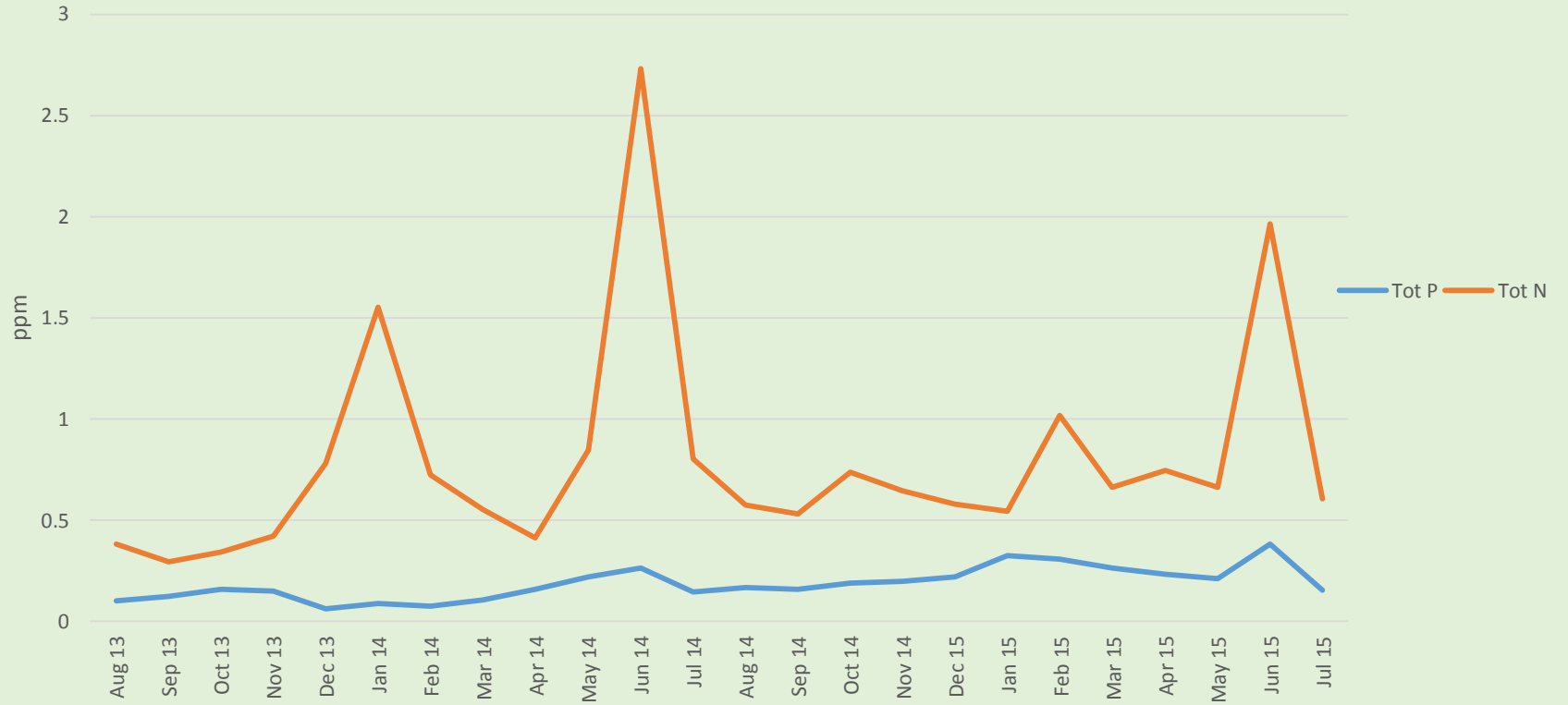
Mean dissolved nutrients for all sites in Middle Cache River study



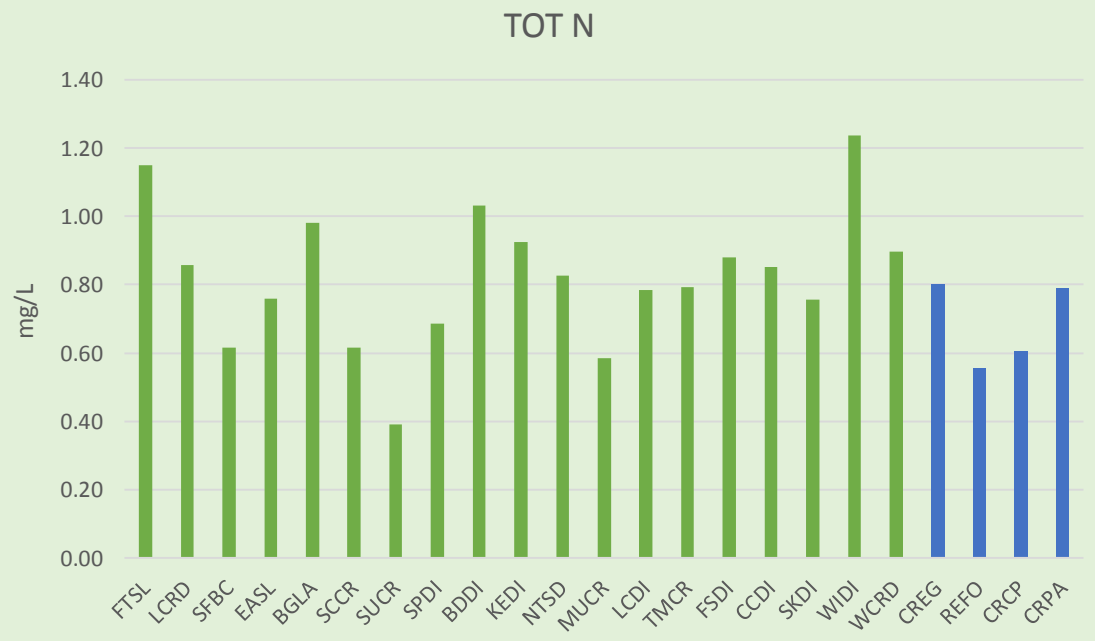
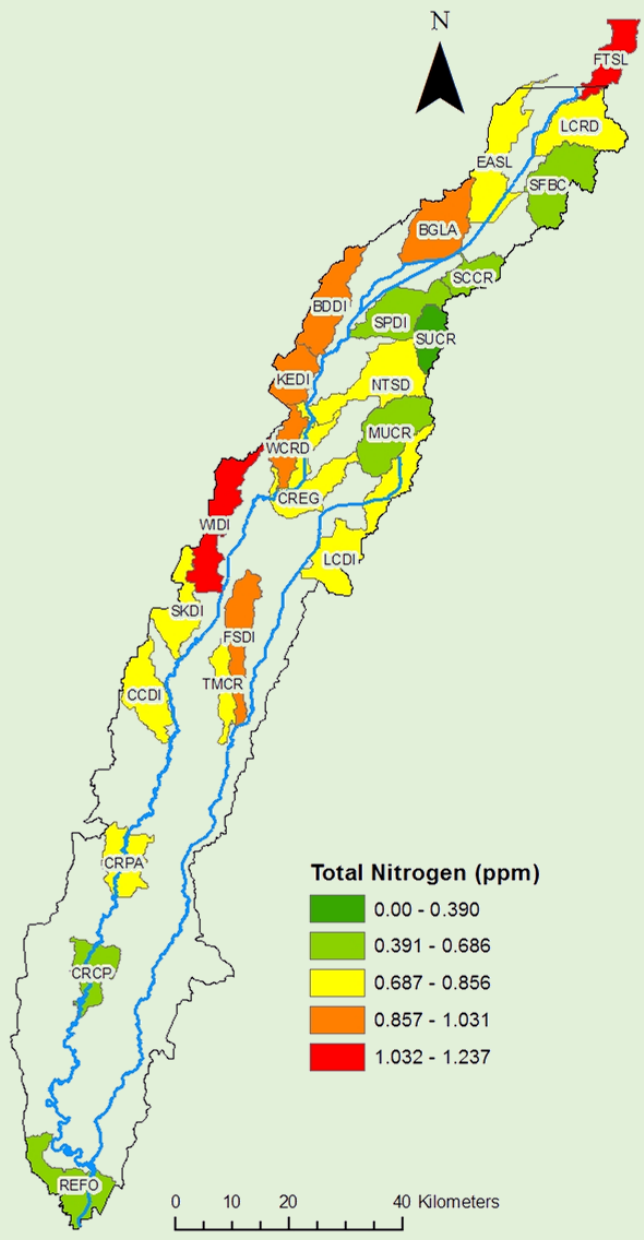


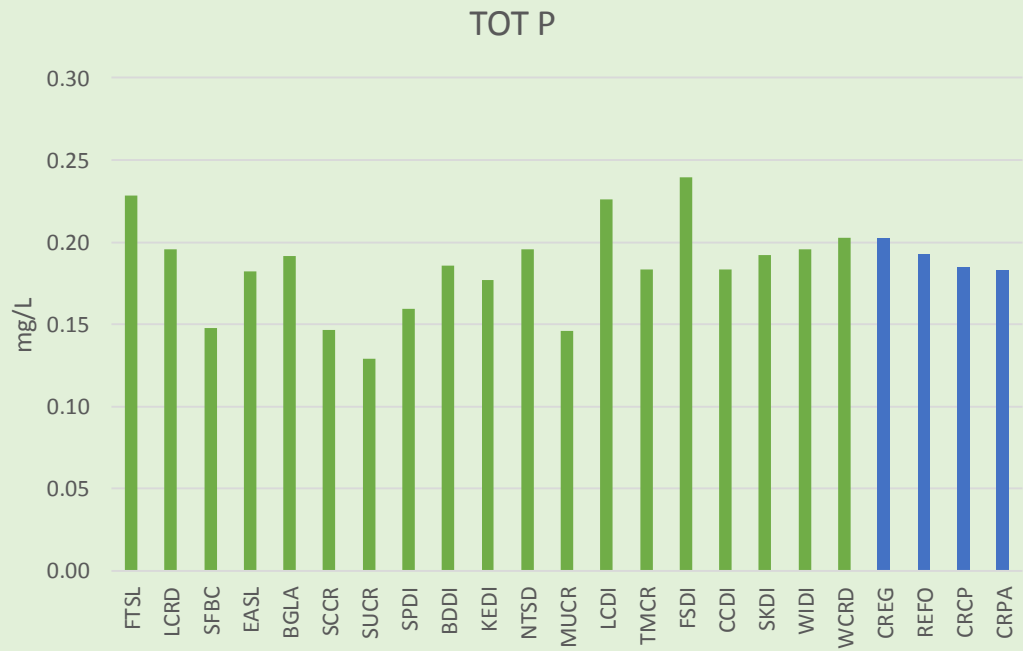
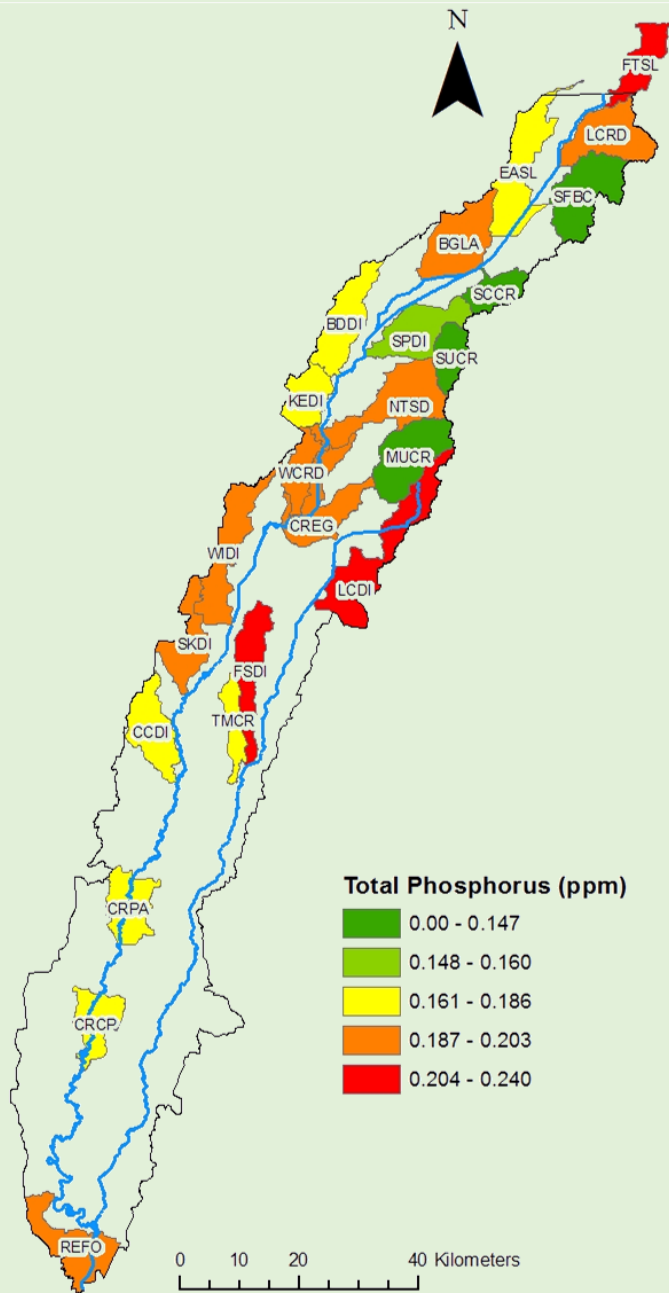


Mean Total Nutrients (Aug 2013-July 2015)

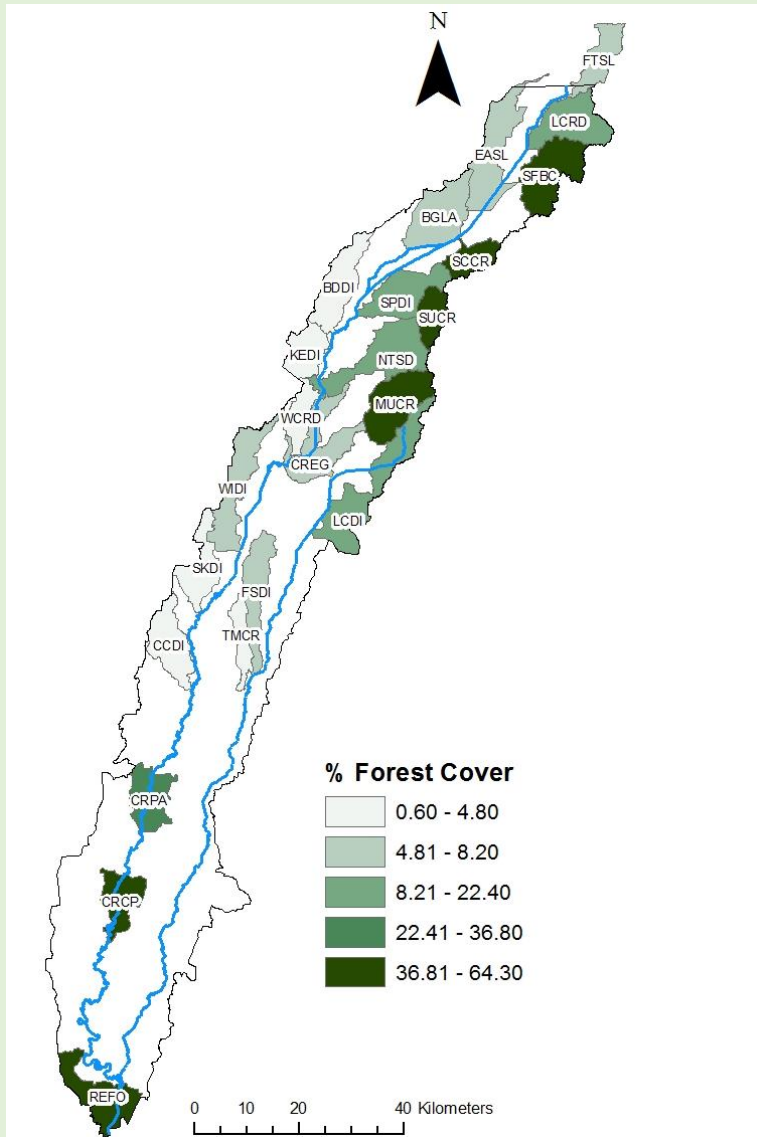


Mean Total N and P for all sites in Middle Cache River study





Preliminary observations



- Lower TSS and nutrients from watersheds with headwaters on Crowley's Ridge
 - Less agricultural influence
 - More forested
- Subwatersheds with greater % agricultural land use have greater nutrient and sediment concentrations
 - Little or no riparian buffers
 - No mitigative capacity for field runoff

Questions?



Thanks to ANRC, Katie Kilmer and students and technicians at Ecotox.