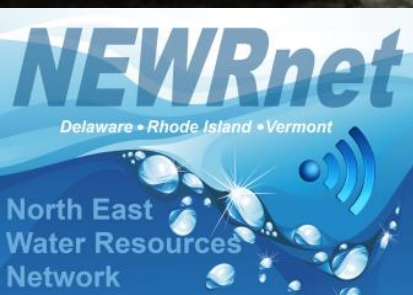


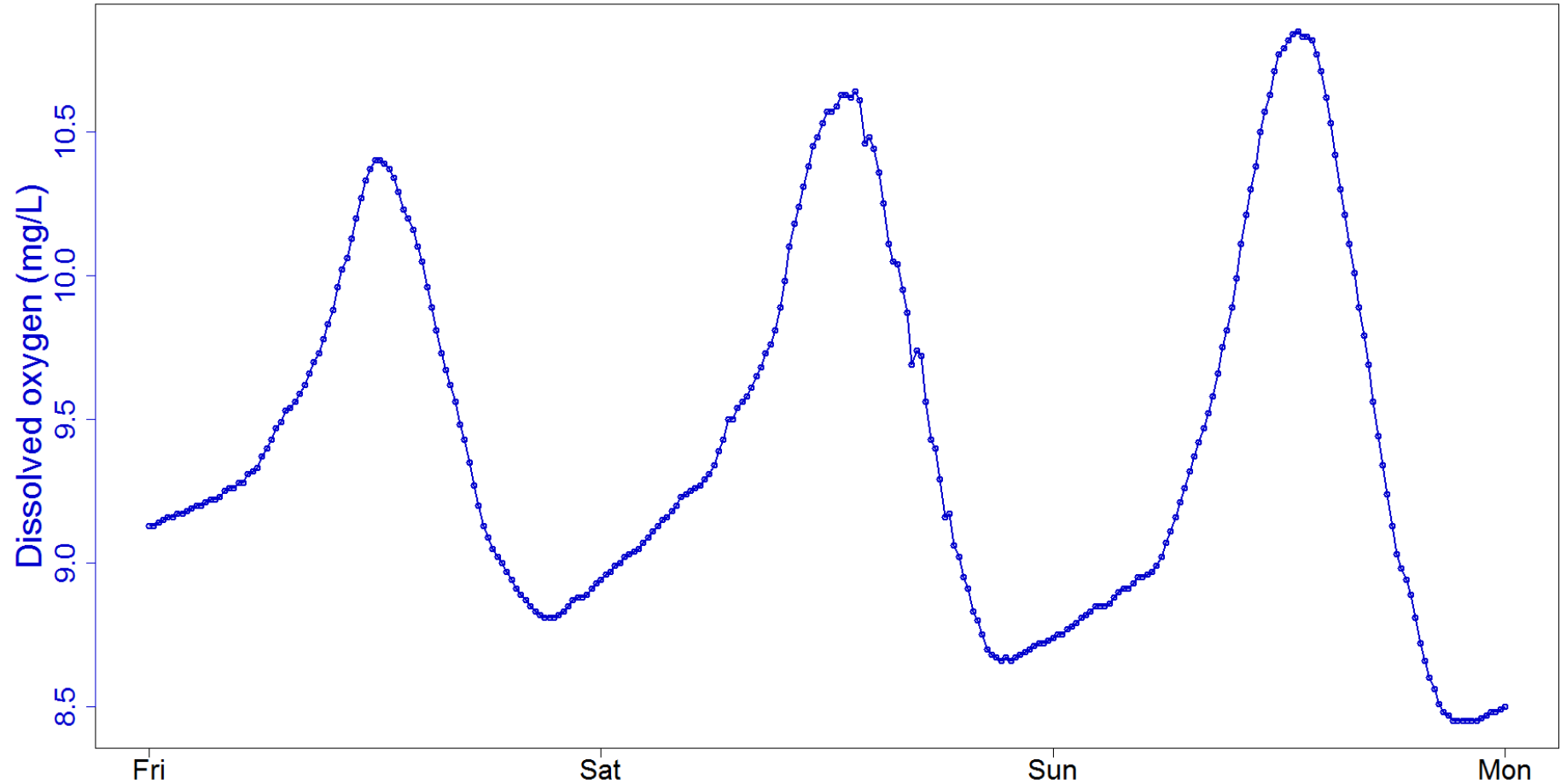
Ryan Sleeper  
UVM

M.S Candidate in Natural Resources – Aquatic Ecology and Watershed Science

# Whole Stream Metabolism: Investigating Effects of Land Use and Nutrients



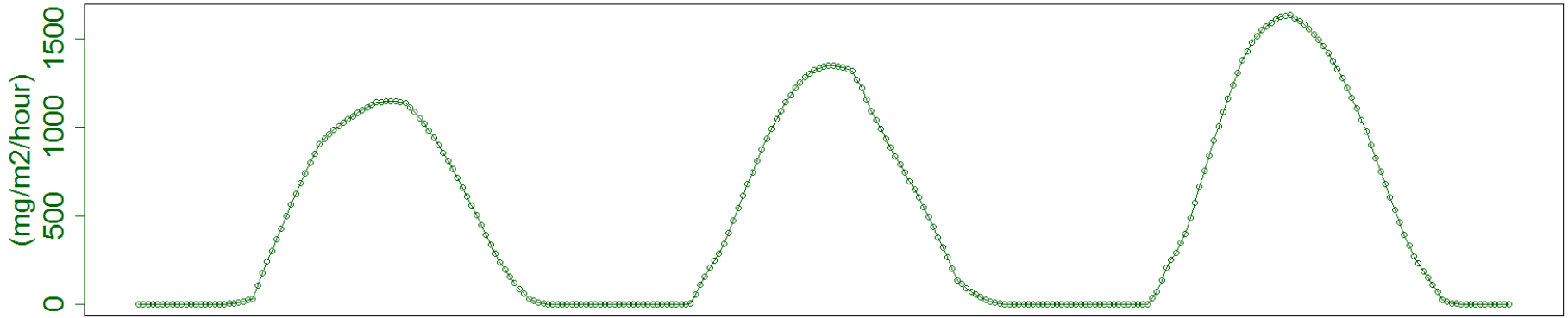
# Dissolved oxygen concentrations fluctuate day-to-day



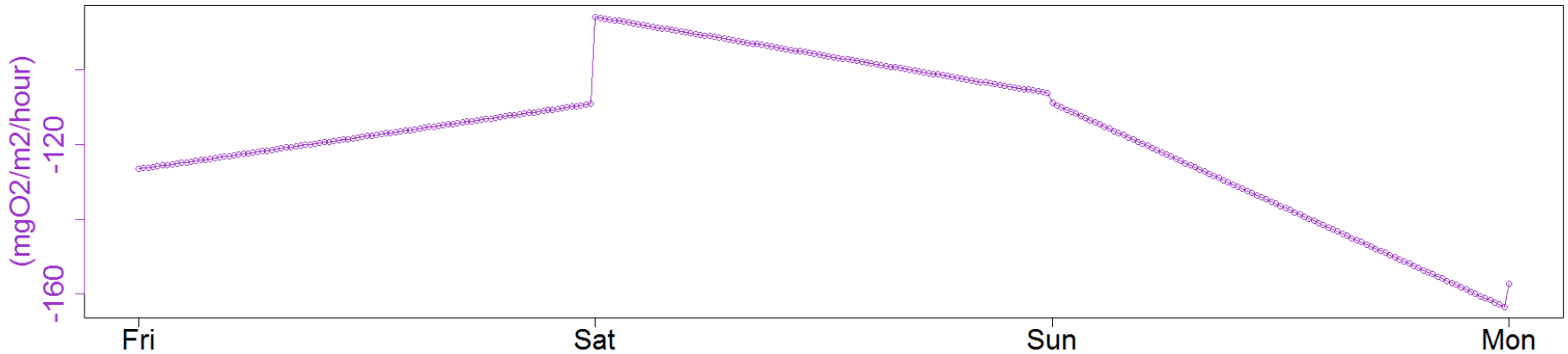
— DO

# We are left with the biological controls on dissolved oxygen

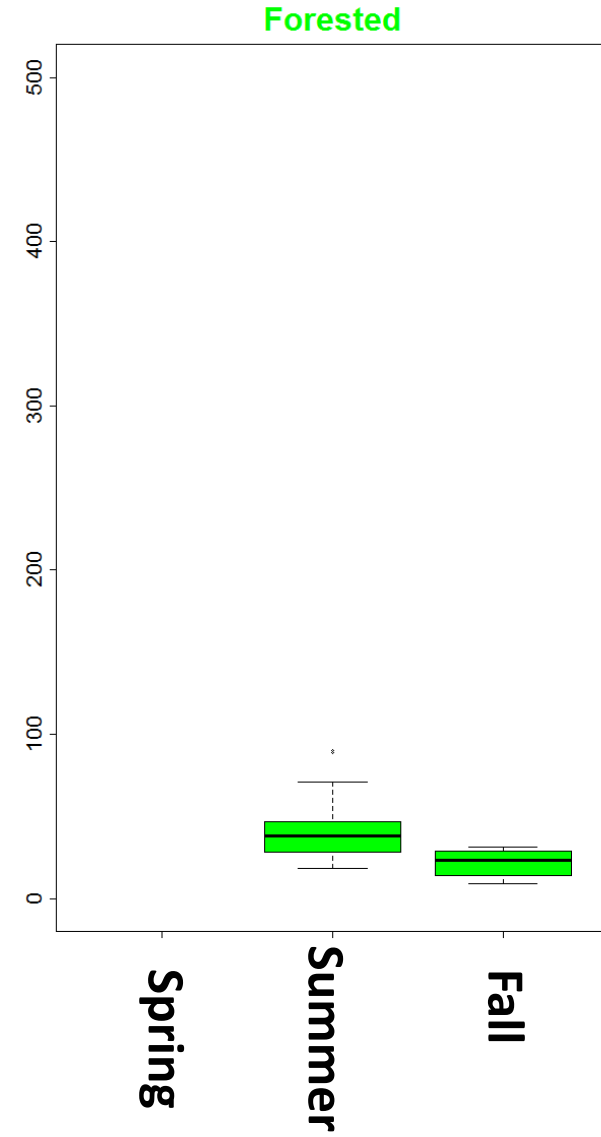
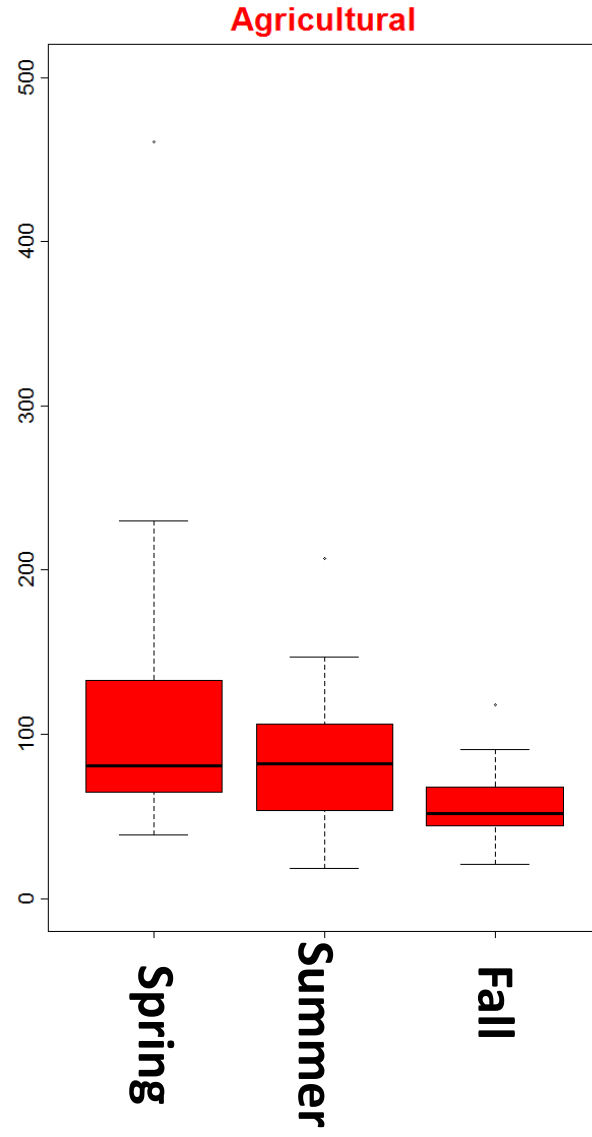
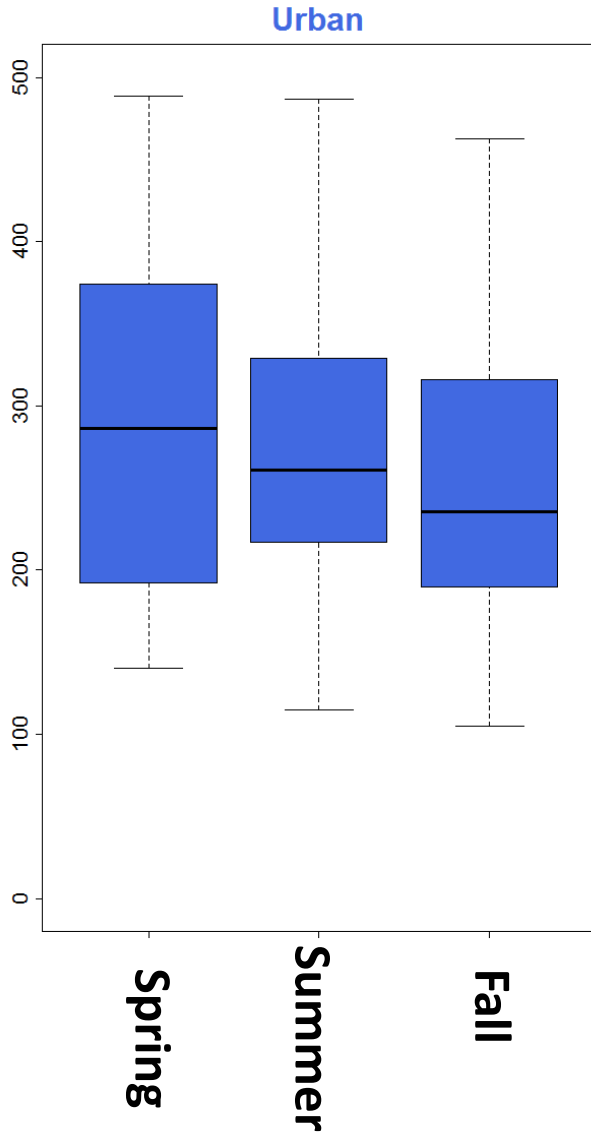
## Ecosystem Production



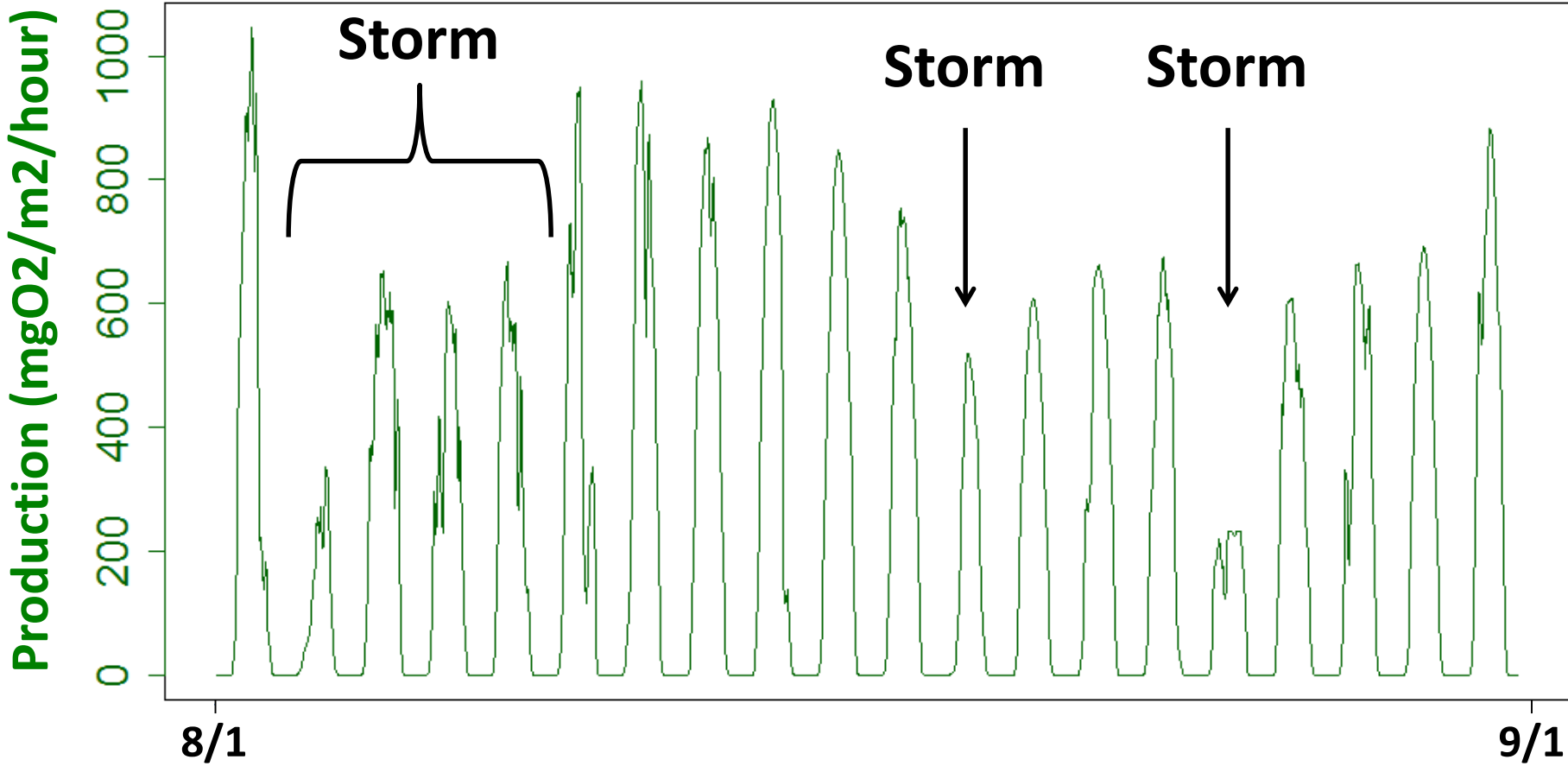
## Ecosystem Respiration



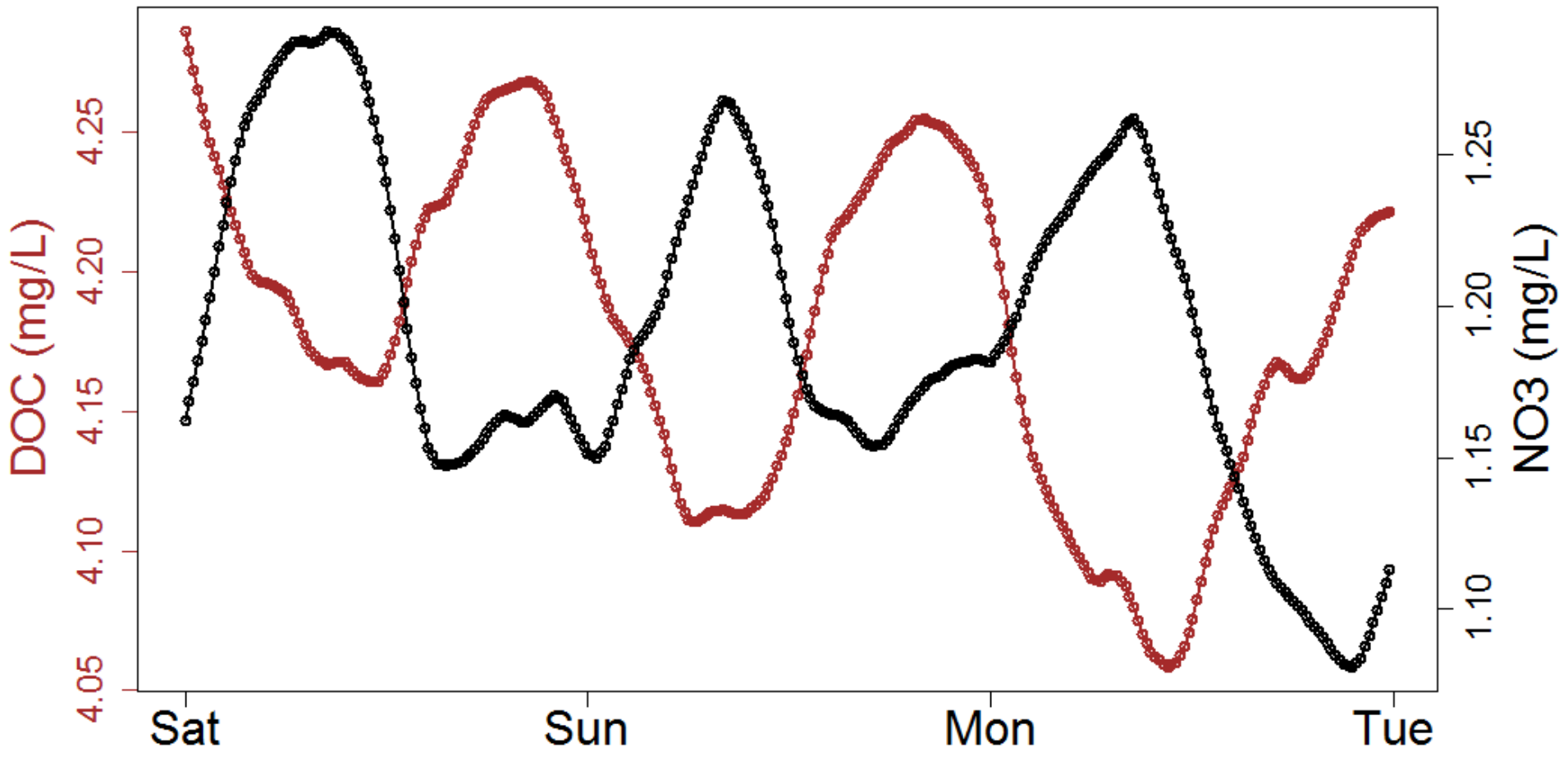
# Ecosystem Production varies by season and stream



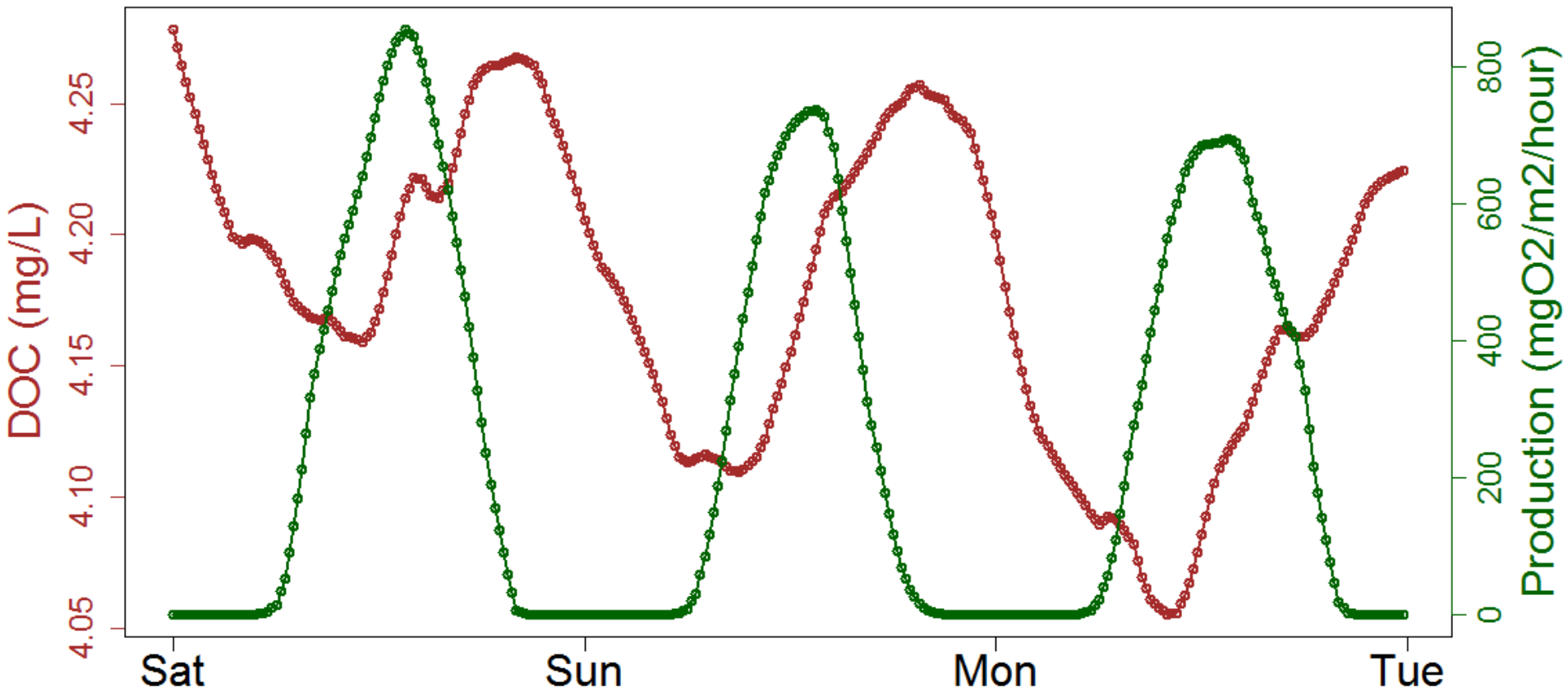
# Storms can suppress production



Similar to dissolved oxygen, we see daily cycles in dissolved organic carbon and nitrate

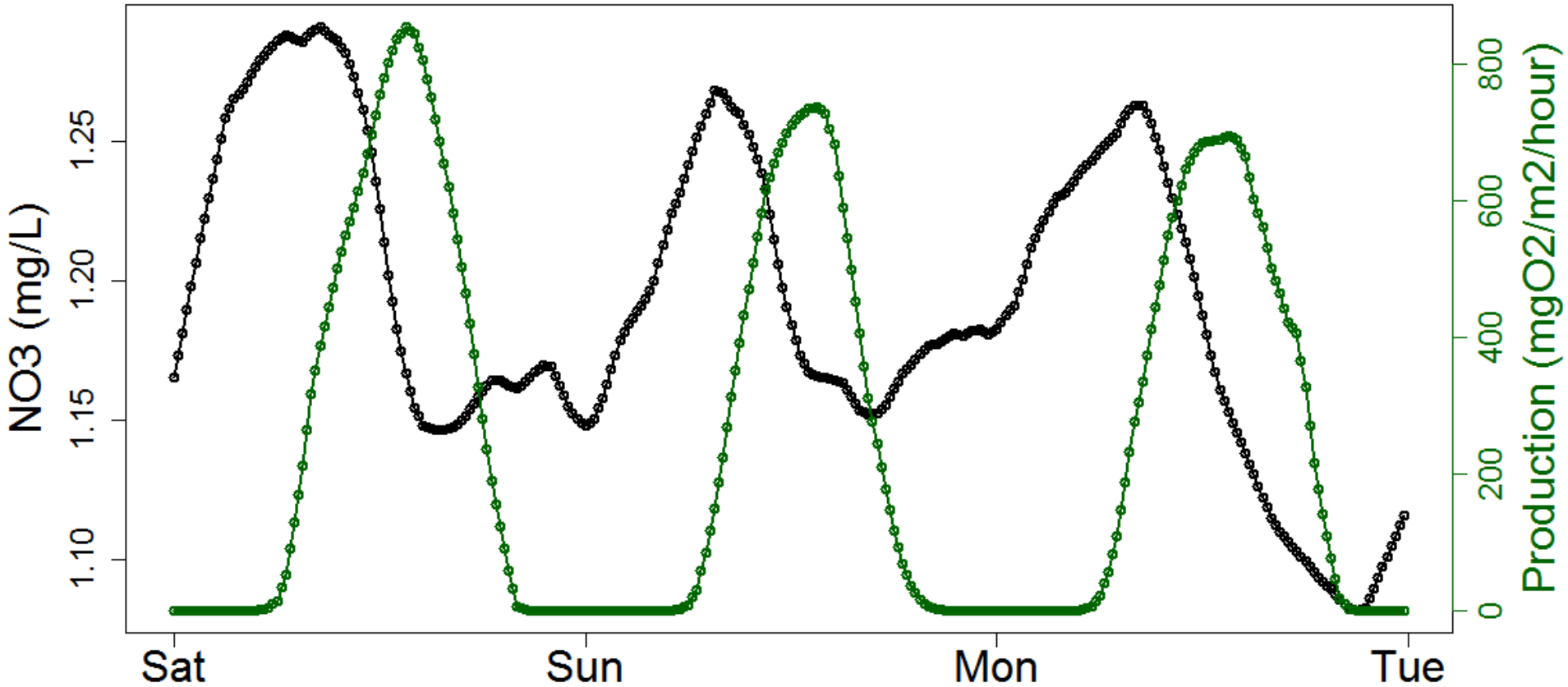


# Hypothesis: DOC dynamics are being driven by photosynthetic waste





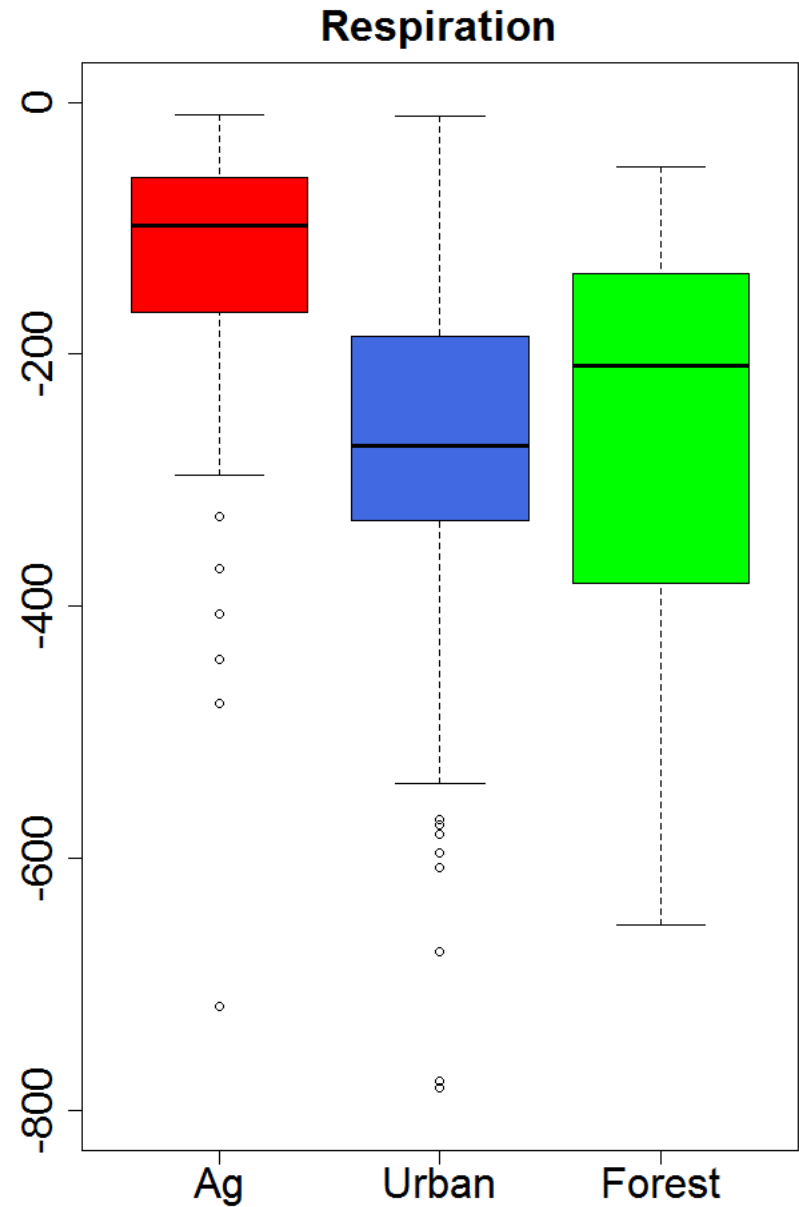
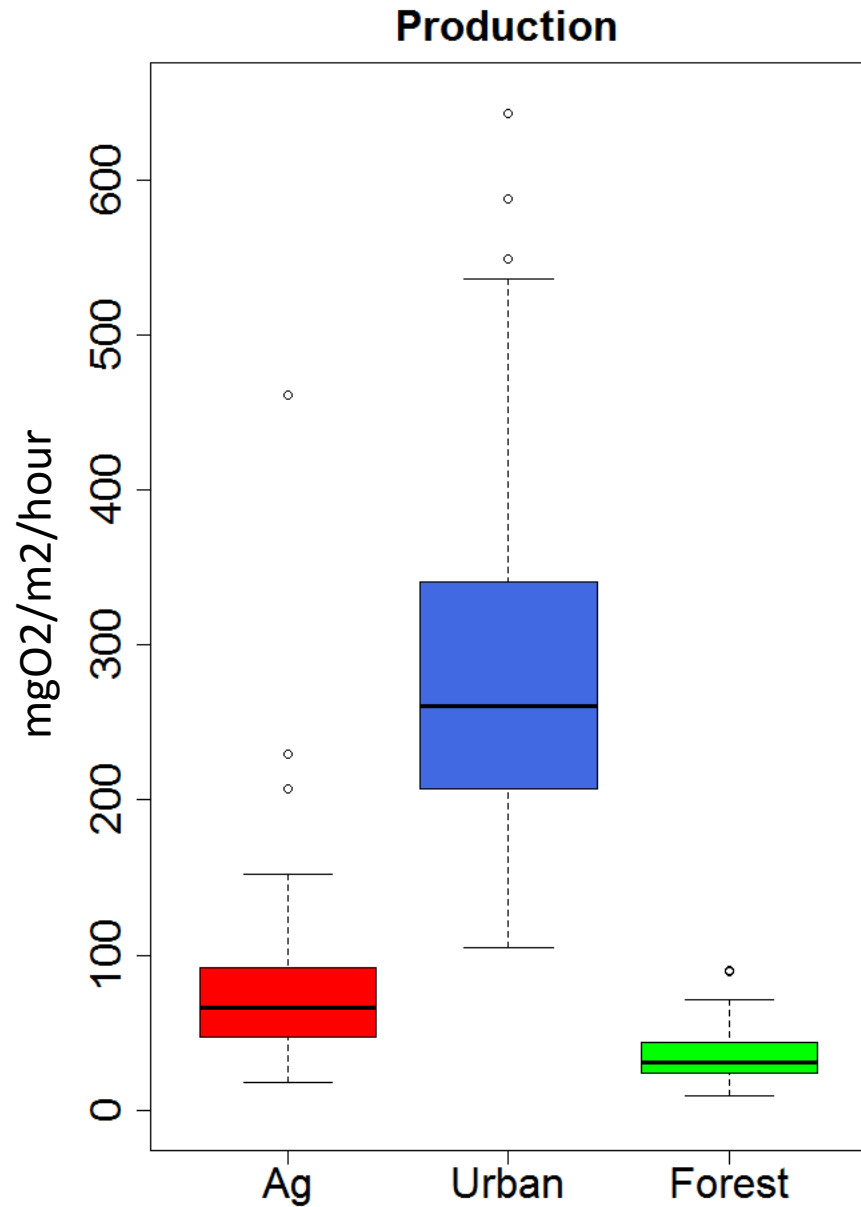
# Hypothesis: Nitrate dynamics are being driven by productive uptake





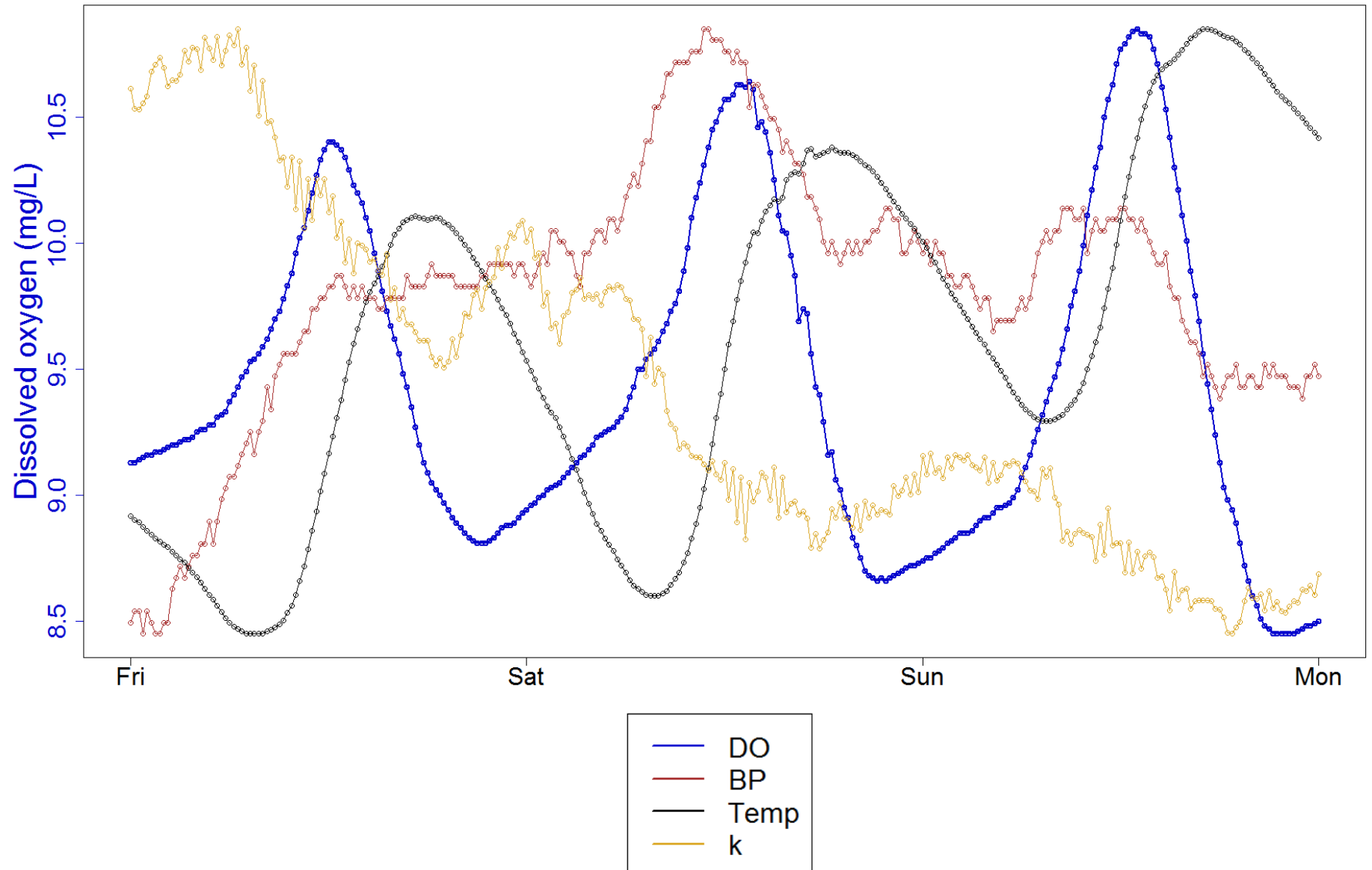


# Overall metabolic differences exist between streams

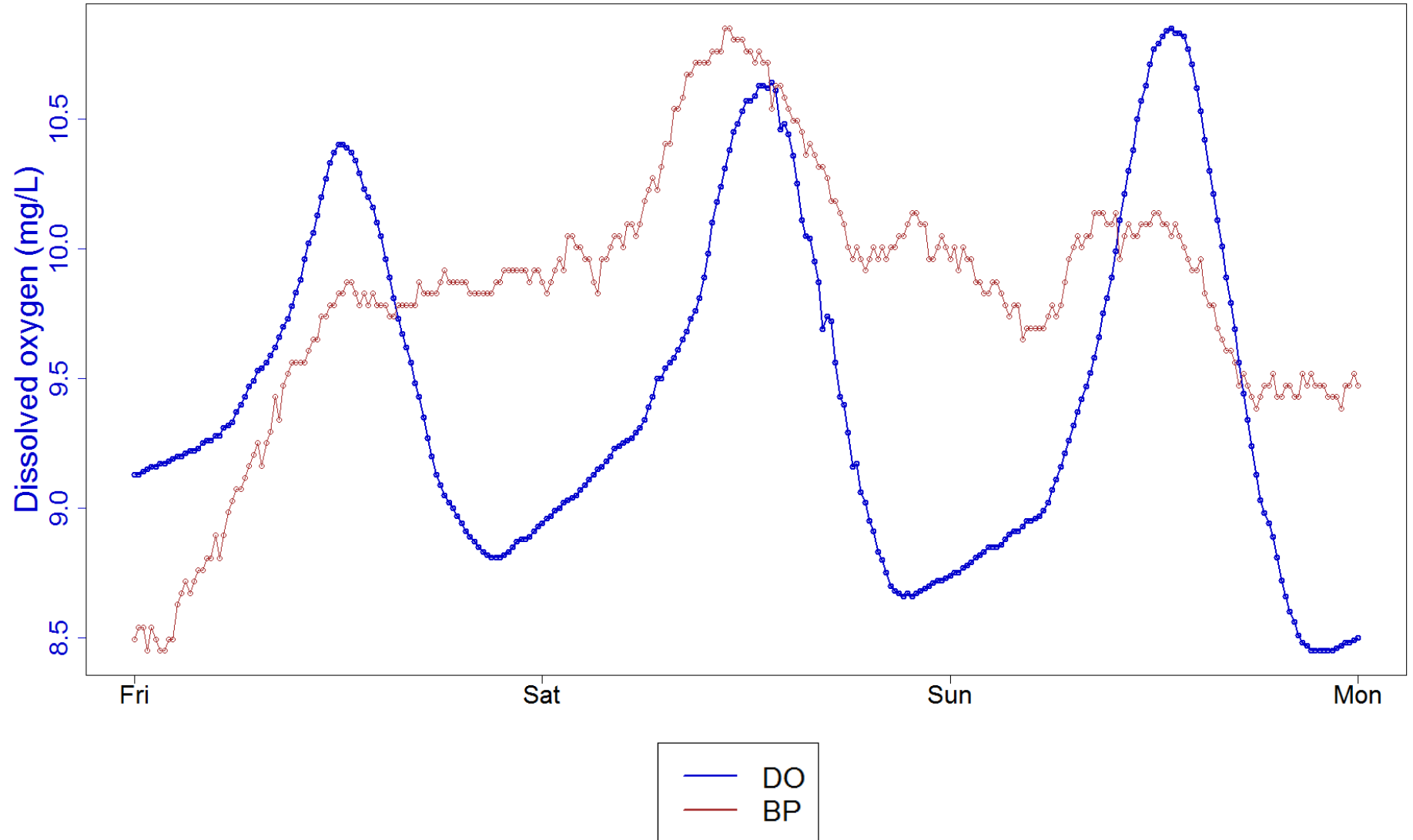


- Controls on N transformations in streams are of particular interest because N availability is increasing rapidly because of human activities (Vitousek et al. 1997) and streams are hot spots of N uptake and retention within landscapes (Alexander

# We remove the effects of these physical variables



# Physical variables also effect dissolved oxygen levels



# Physical variables also effect dissolved oxygen levels

