

FLORIDA SPRINGS Research



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Research

- Vadose zone transport
- *Groundwater storage, flow and solute transport*
- Assess freshwater resource availability
- Agricultural impacts on water quality and quantity
- Evolution of karst aquifers
- *Matrix and conduit exchange in karst aquifers*
- Flood risk



Numerical modelling bedrock during reversals at Madison Blue Springs?

What values do different recharge datasets provide for Florida?

Water Budgets

Geochemistry ^{sl}

What are the relative contributions of shallow and deep-water sources at springs along the Suwannee river corridor?

What can we use the data from the continuous monitoring program by the DEP/WMD's for at selected springs?



Applied Statistics

Analyzing low-frequency nitrate signals in Florida Springs.

Monitoring our springs can be challenging





Peacock Springs

- Variability in cave passage chemistry has been observed
- Implications for nitrate attenuation and
- Other springs to follow

Nitrate dynamics





Unconfined

Confined



Results



- Significant, consistent lag between peak precipitation and peak nitrate
- No significant signal at Ichetucknee Blue springs, which is confined.
- Likely not denitrification, which has been assumed in most modelling efforts thus far
- Ichetucknee is mostly confined, explaining why there is little variability in the signal

Conceptual model

Continue work to characterize flows and develop small scale, idealized models – CFPv2.0 MT3DMS



TIME

