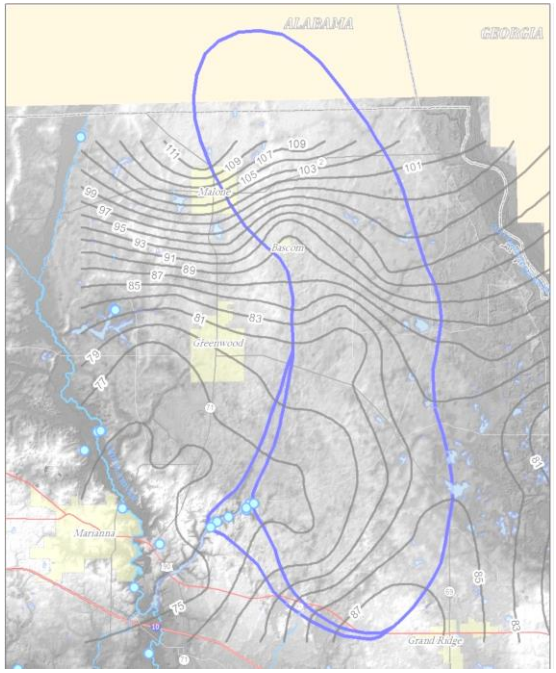
Blue Spring Groundwater Contribution Area



Jackson Blue Spring and Merritt's Mill Pond
Basin Management Action Plan (BMAP)
Technical Meeting
July 28, 2014

Kris Barrios, Manager Field Services Section
kris.barrios@nwfwater.com

Background Information

Definitions – Florida Geological Survey, Special Publication #52

Aquifer

"A body of soil, sediment, or rock that is saturated with water and sufficiently permeable to allow production of water from wells."

Unconfined

"A condition in which the upper surface of the zone of saturation forms a water table under atmospheric pressure."

Confined

"….a condition in which the potentiometric surface is above the elevation of the top of the aquifer."

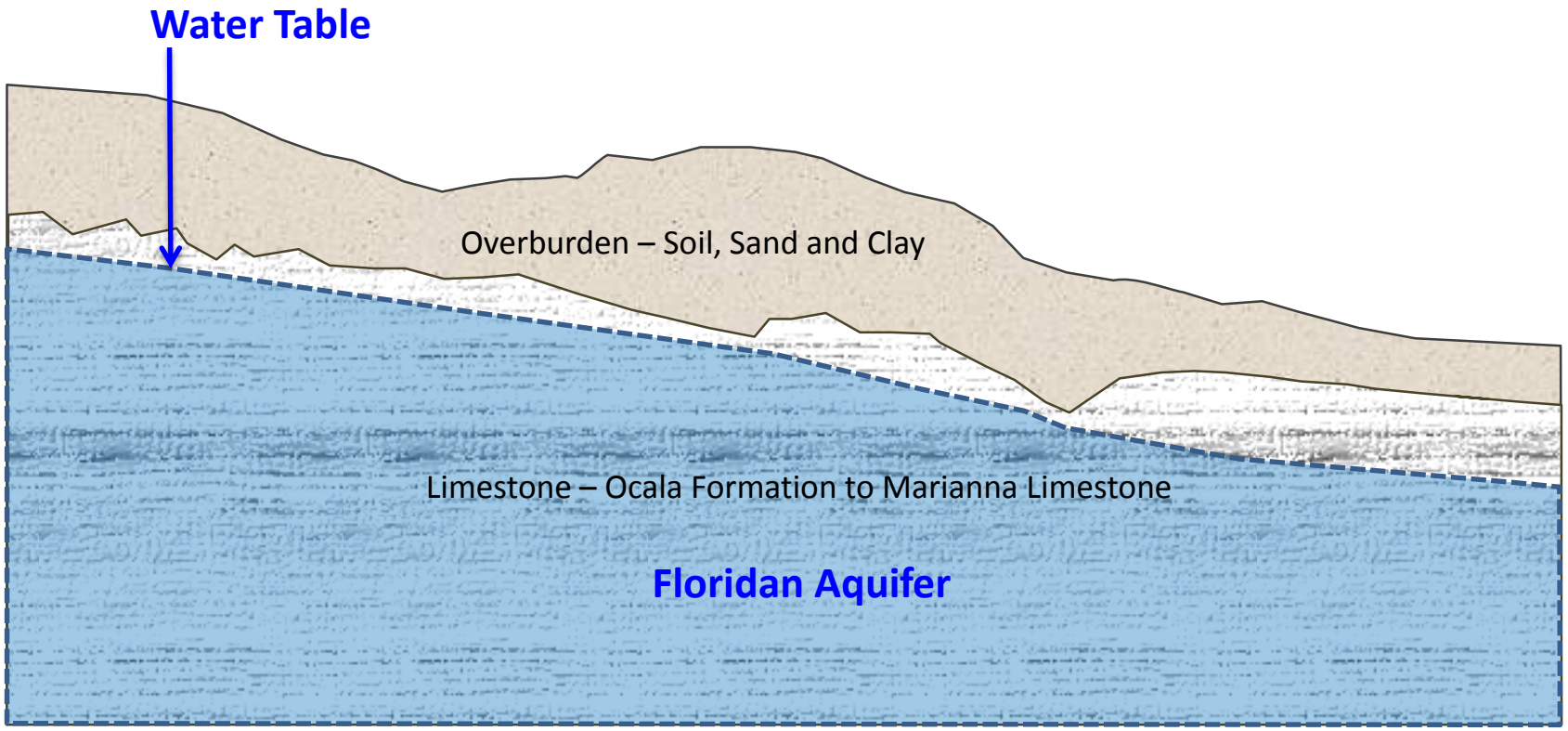
Spring

"A point where underground water emerges onto the Earth's surface."

Groundwater Surface Mapping

(Water Table - Unconfined Aquifer)

Water Table – *"The top of the saturated zone in an unconfined aquifer."*



Groundwater Contribution Area
(Spring Recharge Basin)

"Those areas within ground- and surface-water basins that contribute to the discharge of the spring." – Florida Geological Survey SP52

Methods of Defining a Groundwater Contribution Area

- Groundwater Tracing
- Chemical Characterization
- Groundwater Surface Mapping
- Groundwater Flow Modeling

Groundwater Contribution Area
(Spring Recharge Basin)

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Methods of Defining a Groundwater Contribution Area

- Groundwater Tracing
- Chemical Characterization
- **Groundwater Surface Mapping**
- Groundwater Flow Modeling

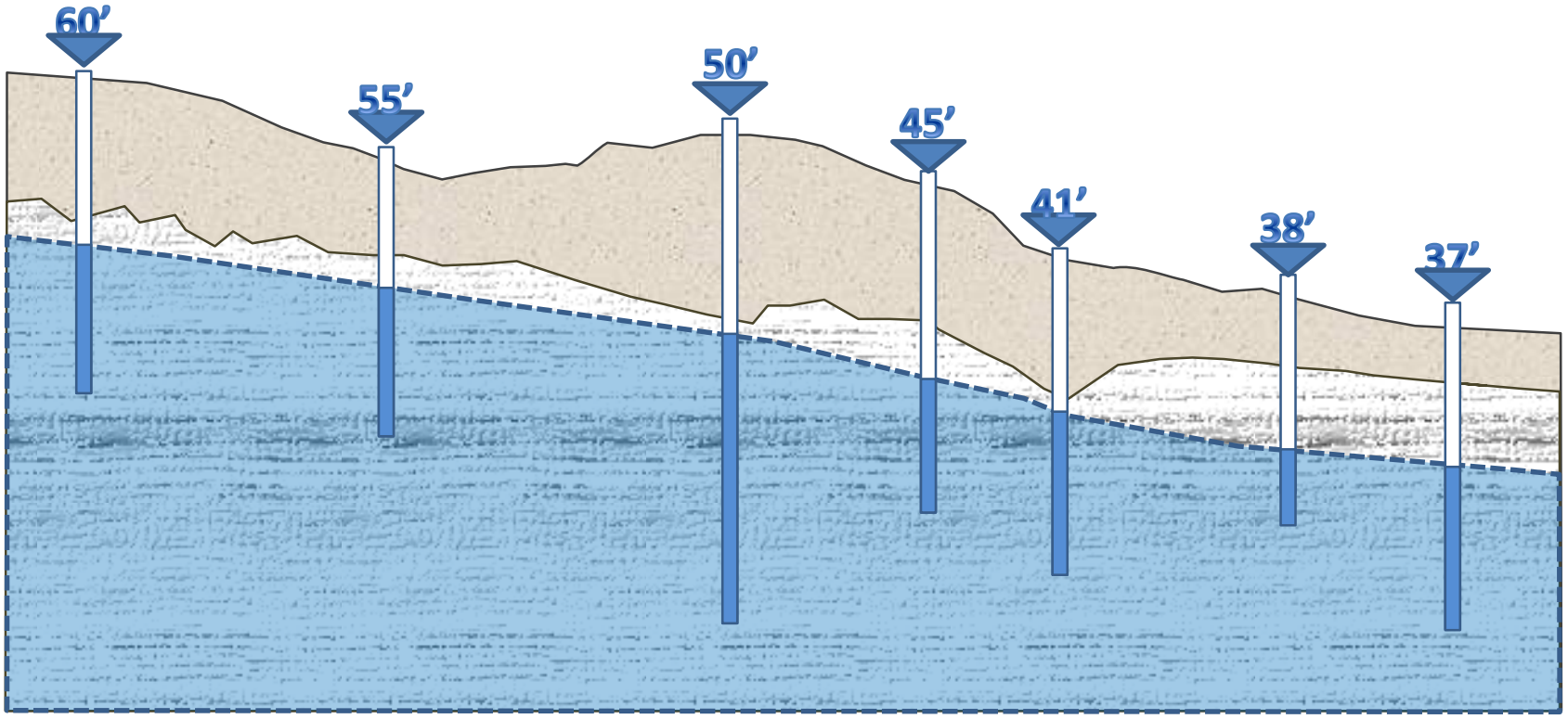
Data Collection

Domestic Wells

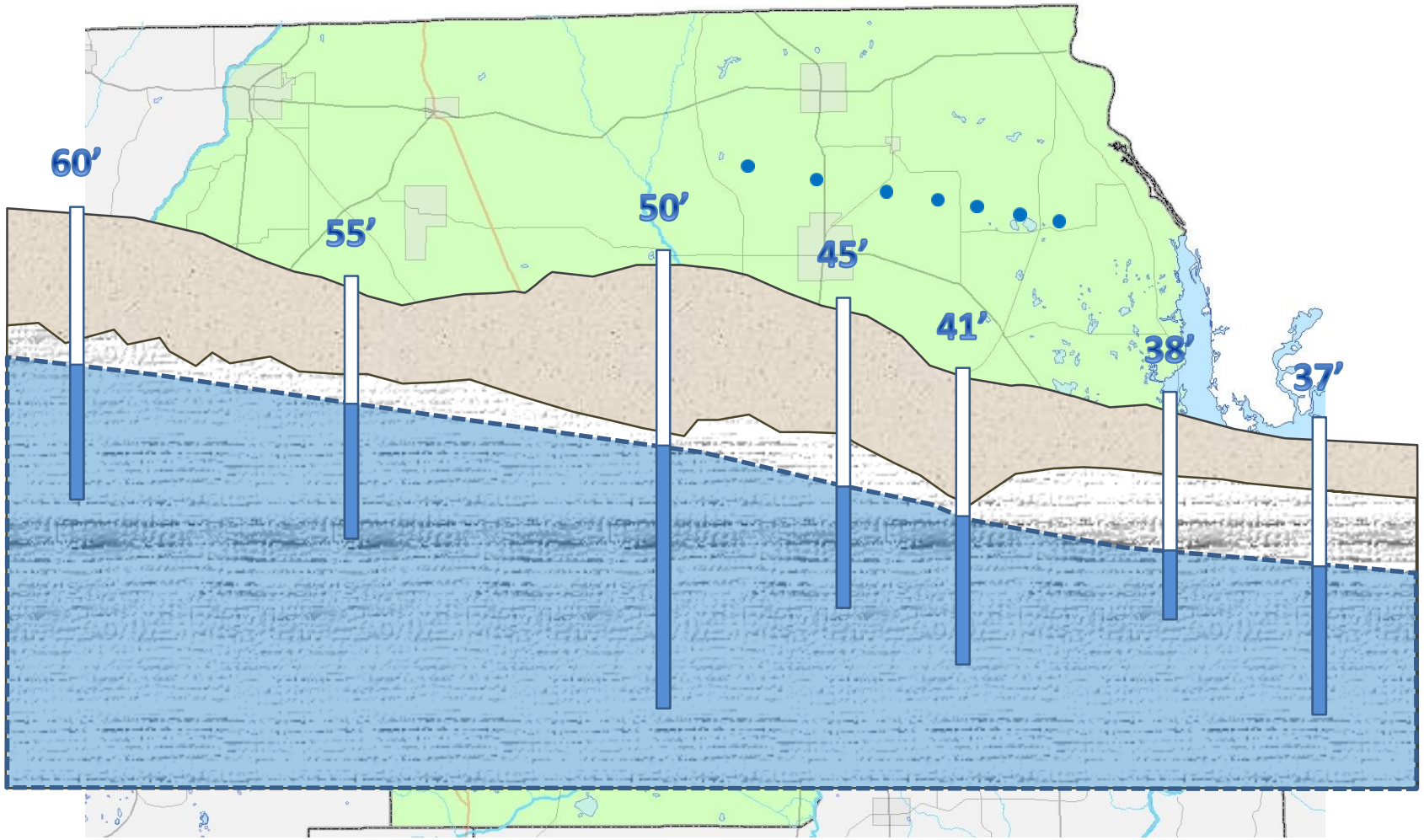
Observation Wells

Public Supply Wells

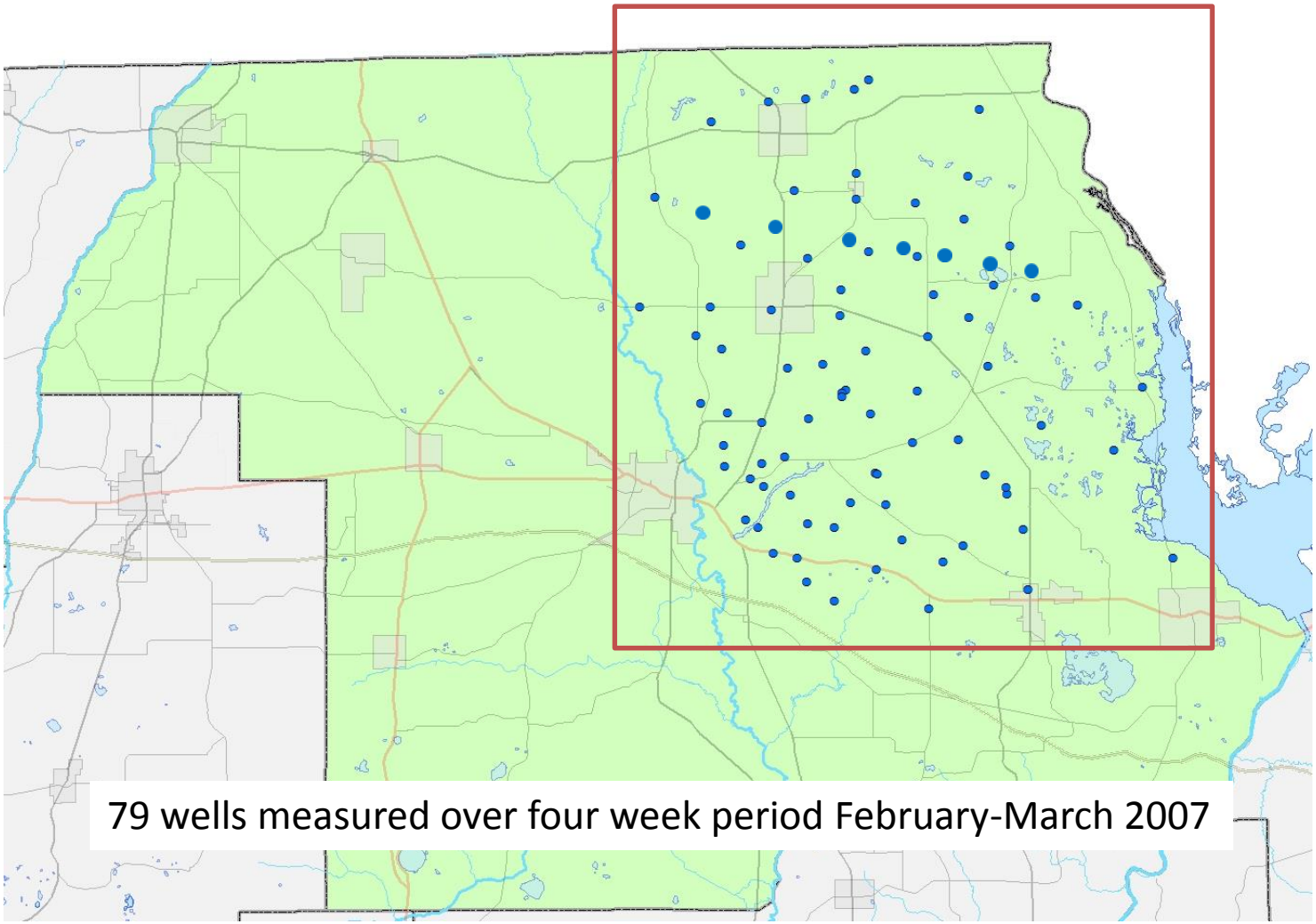
Measuring Groundwater Level



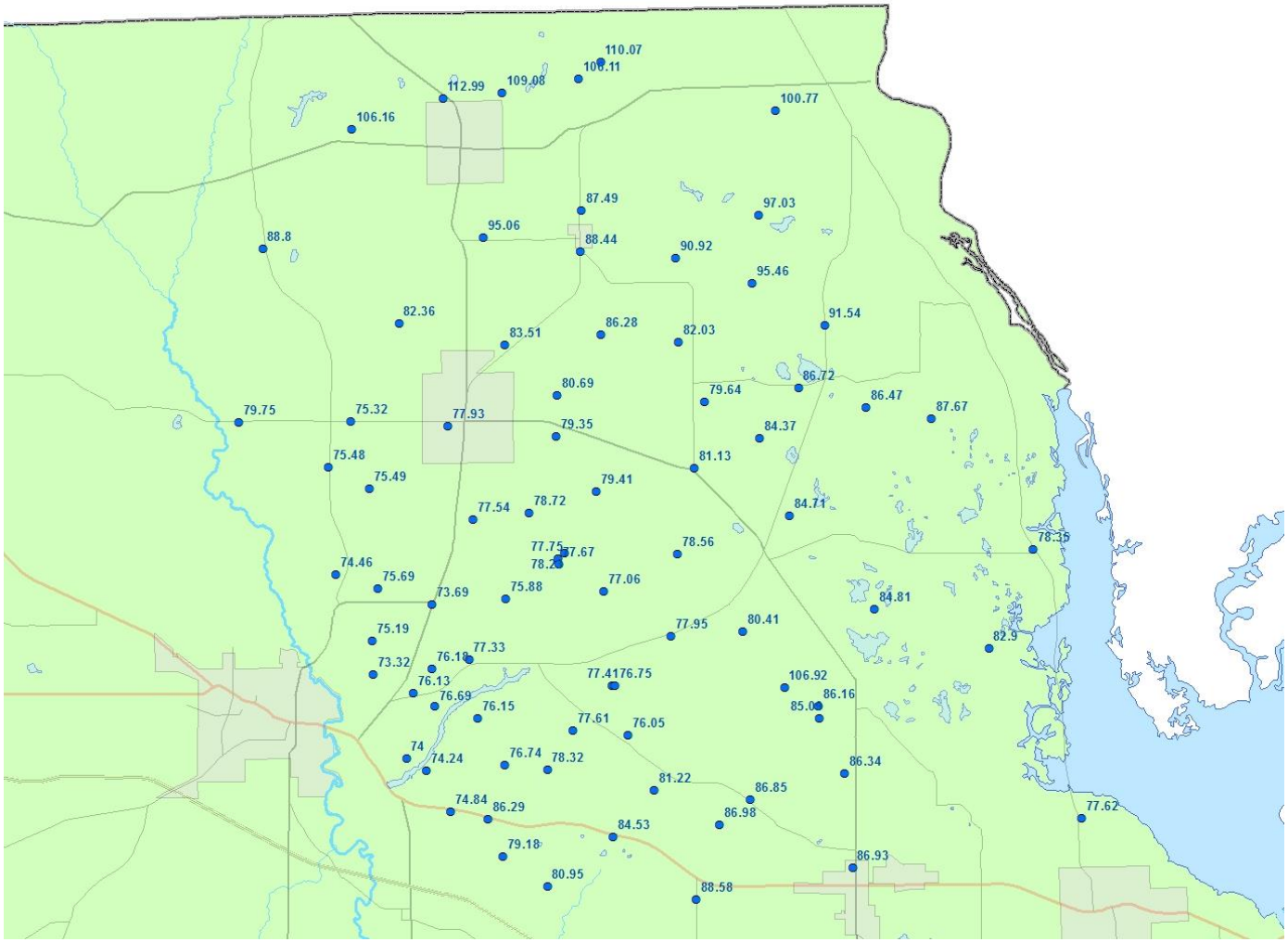
Measuring Groundwater Level



Measuring Groundwater Level

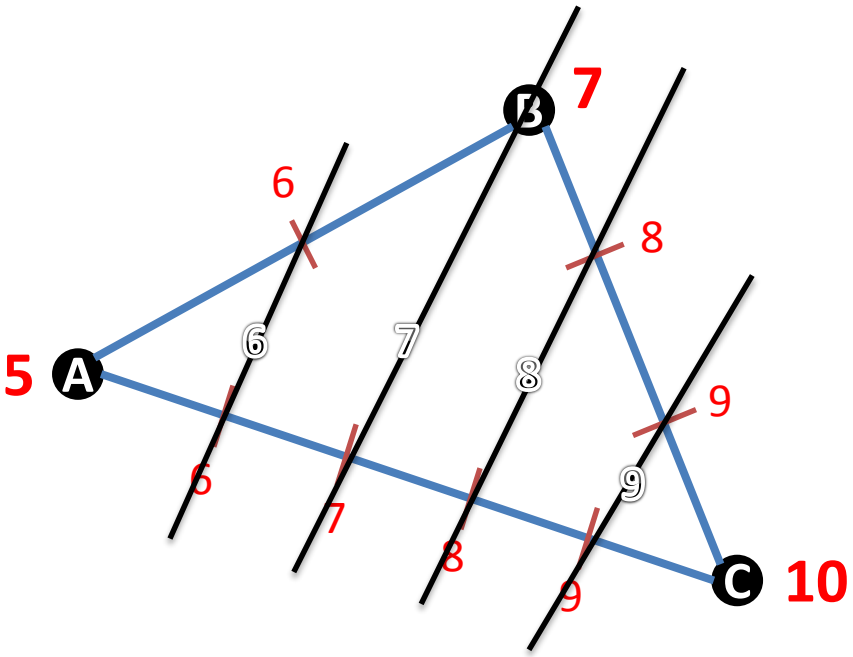


Measuring Groundwater Level

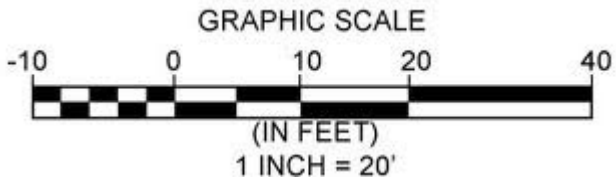


Interpreting Level Data

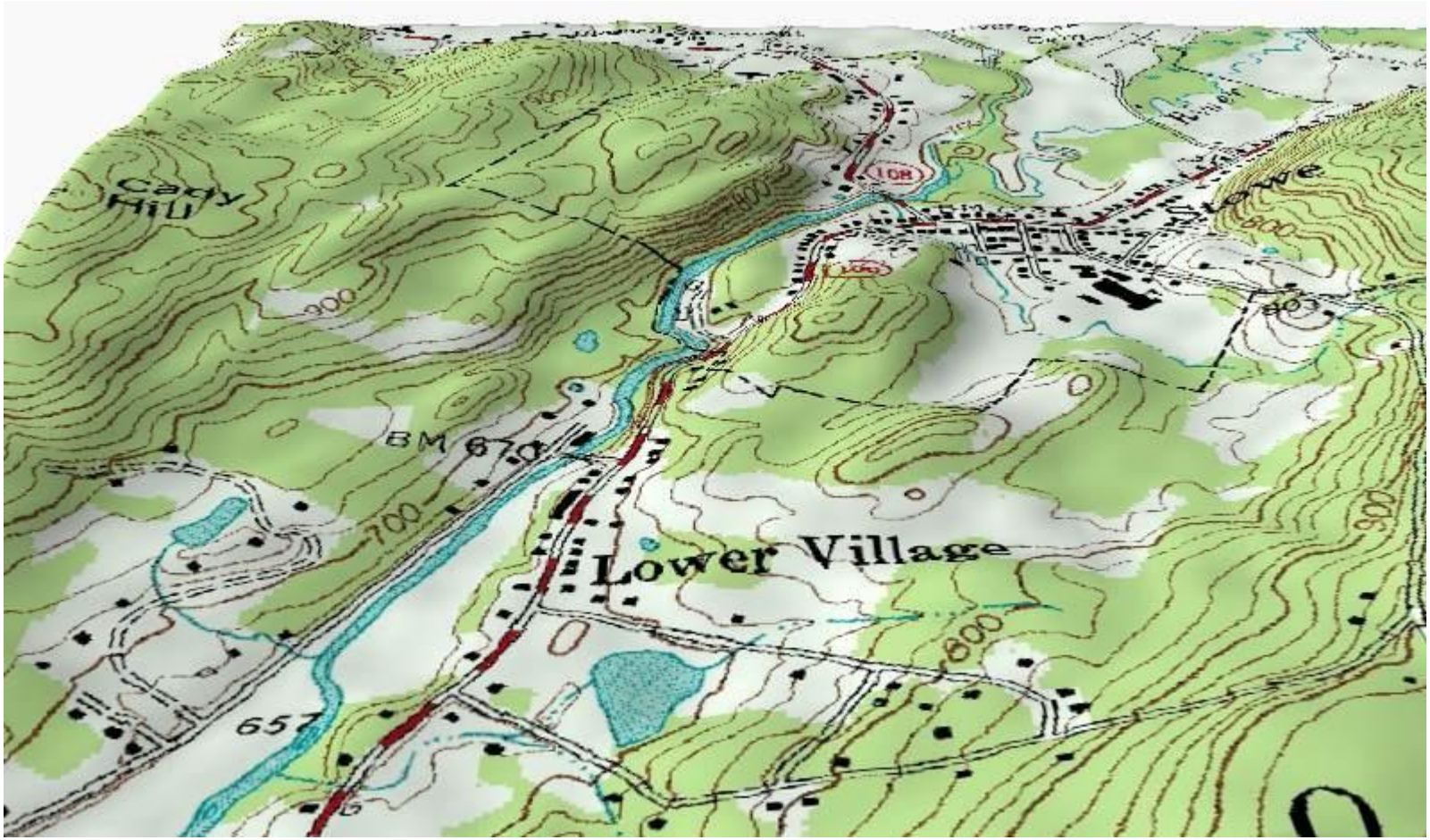
"The Three Point Problem"



Contour Line –
"A line passing through two or more points of equal value"

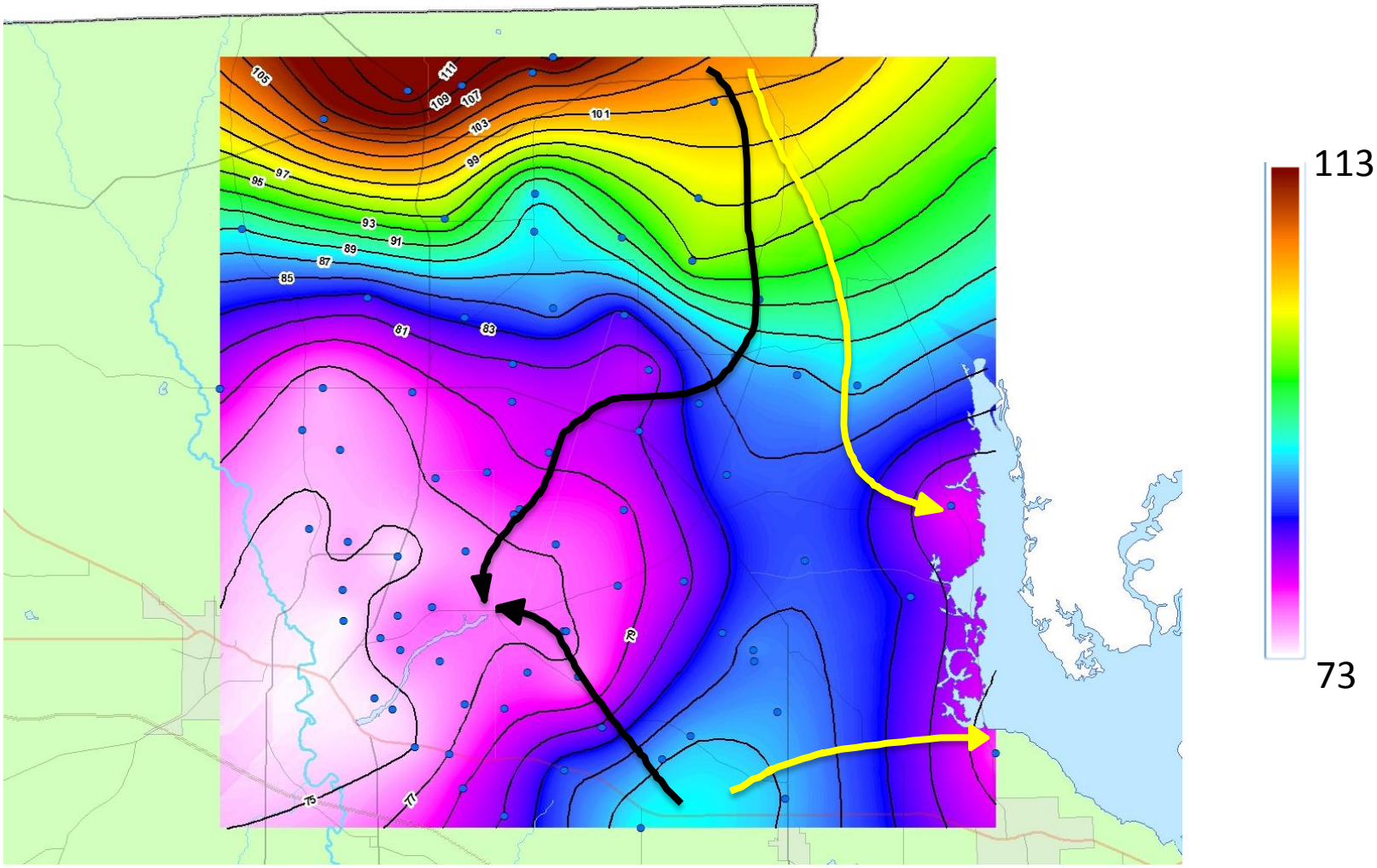


Interpreting Level Data



Topographic Map

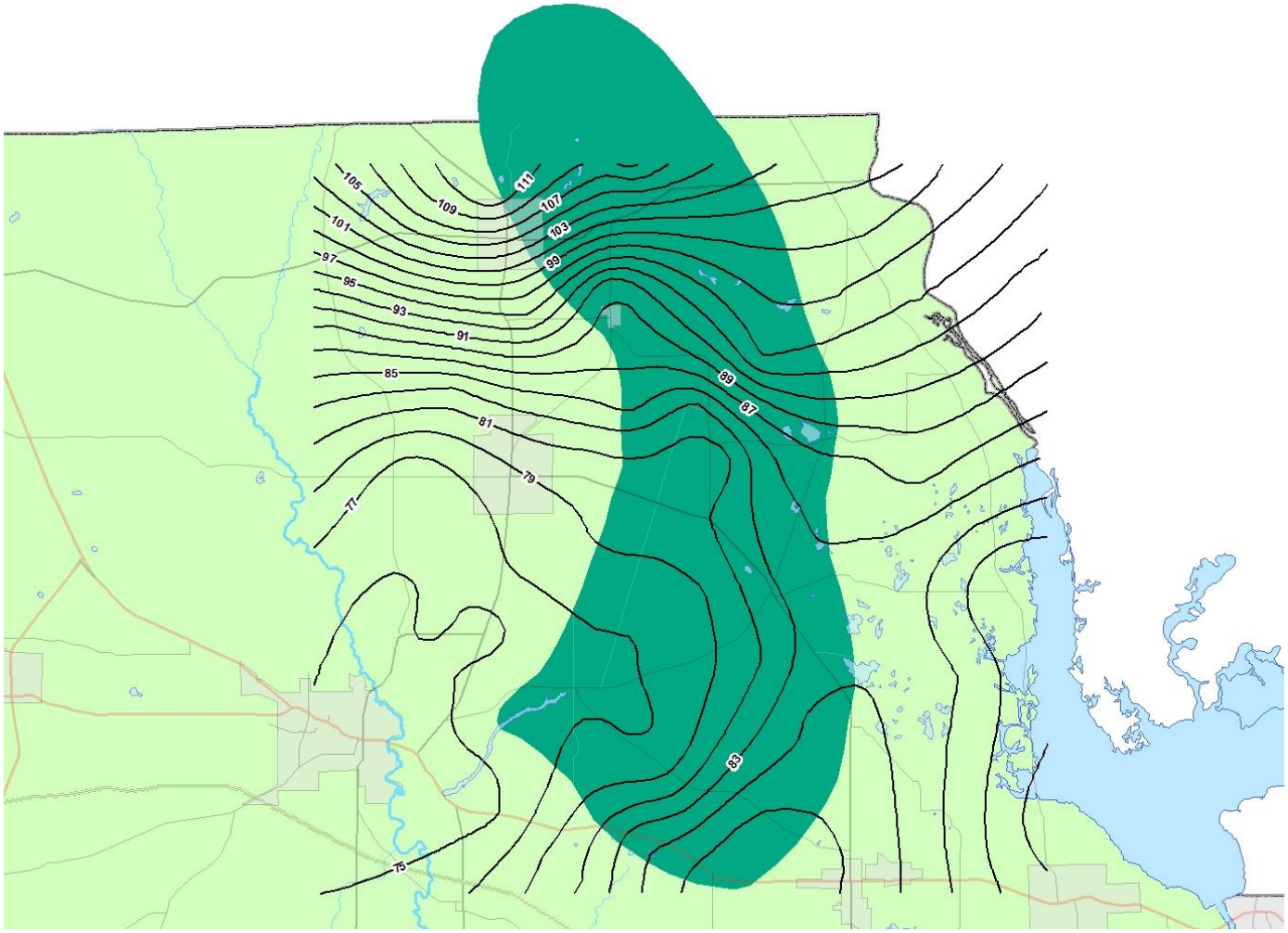
Interpreting Level Data



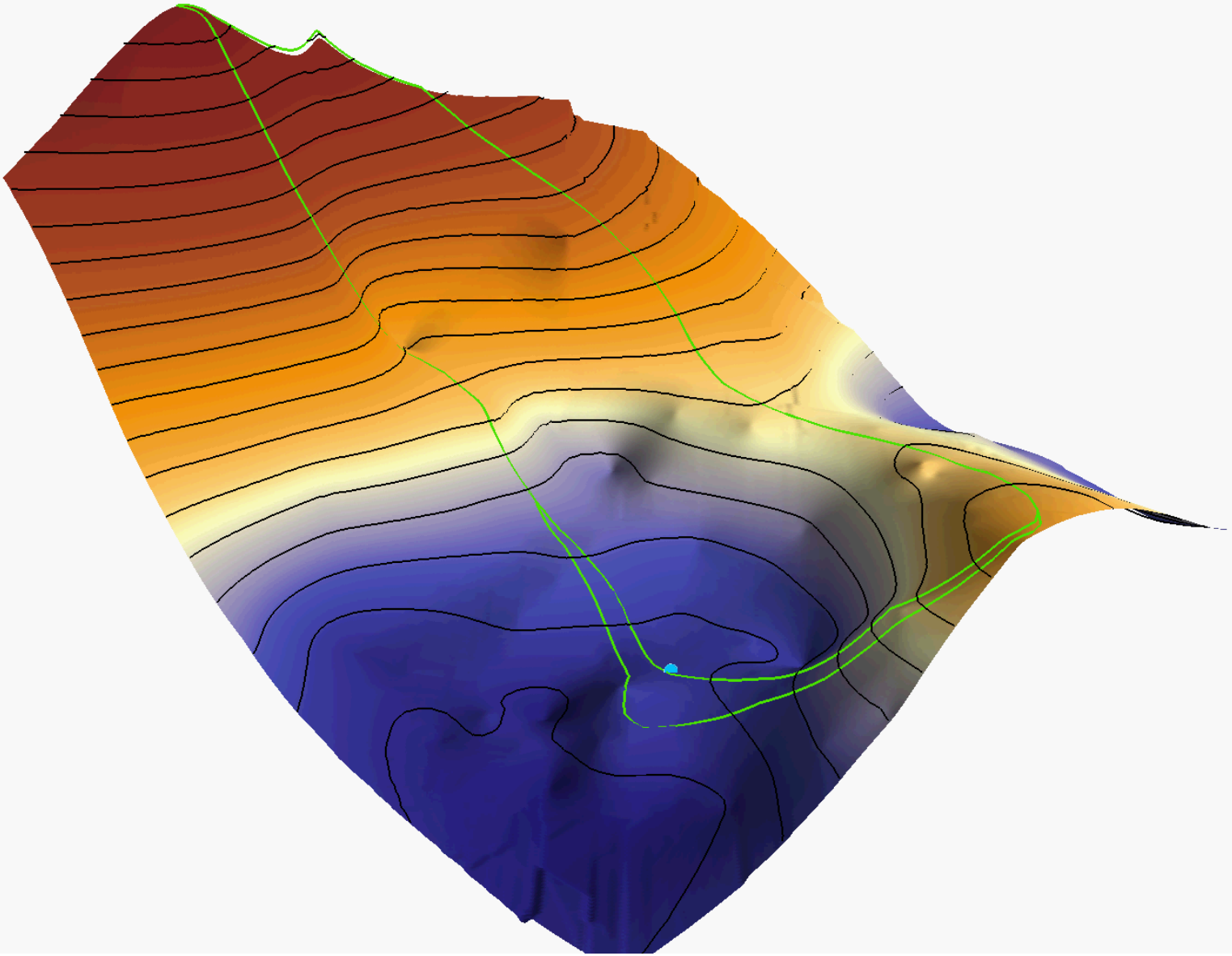
Groundwater travels from areas of high elevation to low elevation perpendicular to contours.

---Downgradient---

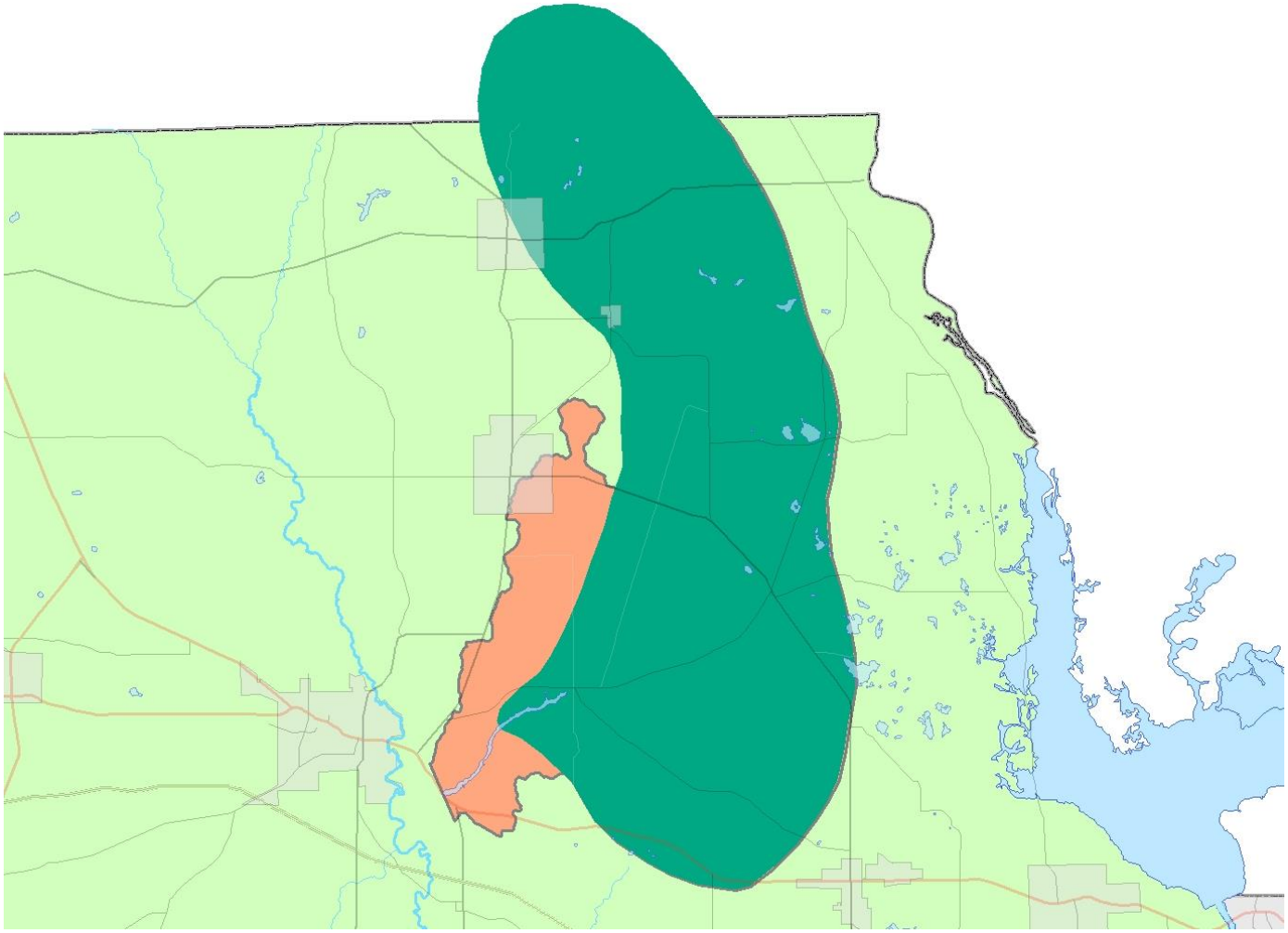
Groundwater Contribution Area



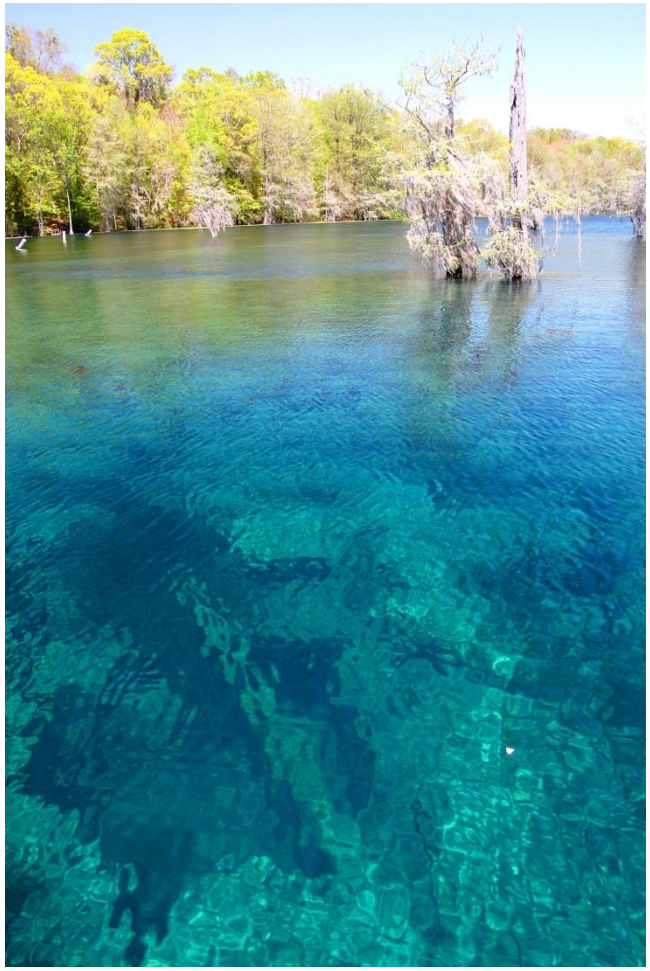
Groundwater contribution area based on flowpaths that lead to spring discharge.



BMAP Contribution Area



Includes an additional component of probable surface water and groundwater contribution to the entire Mill Pond



Questions?