

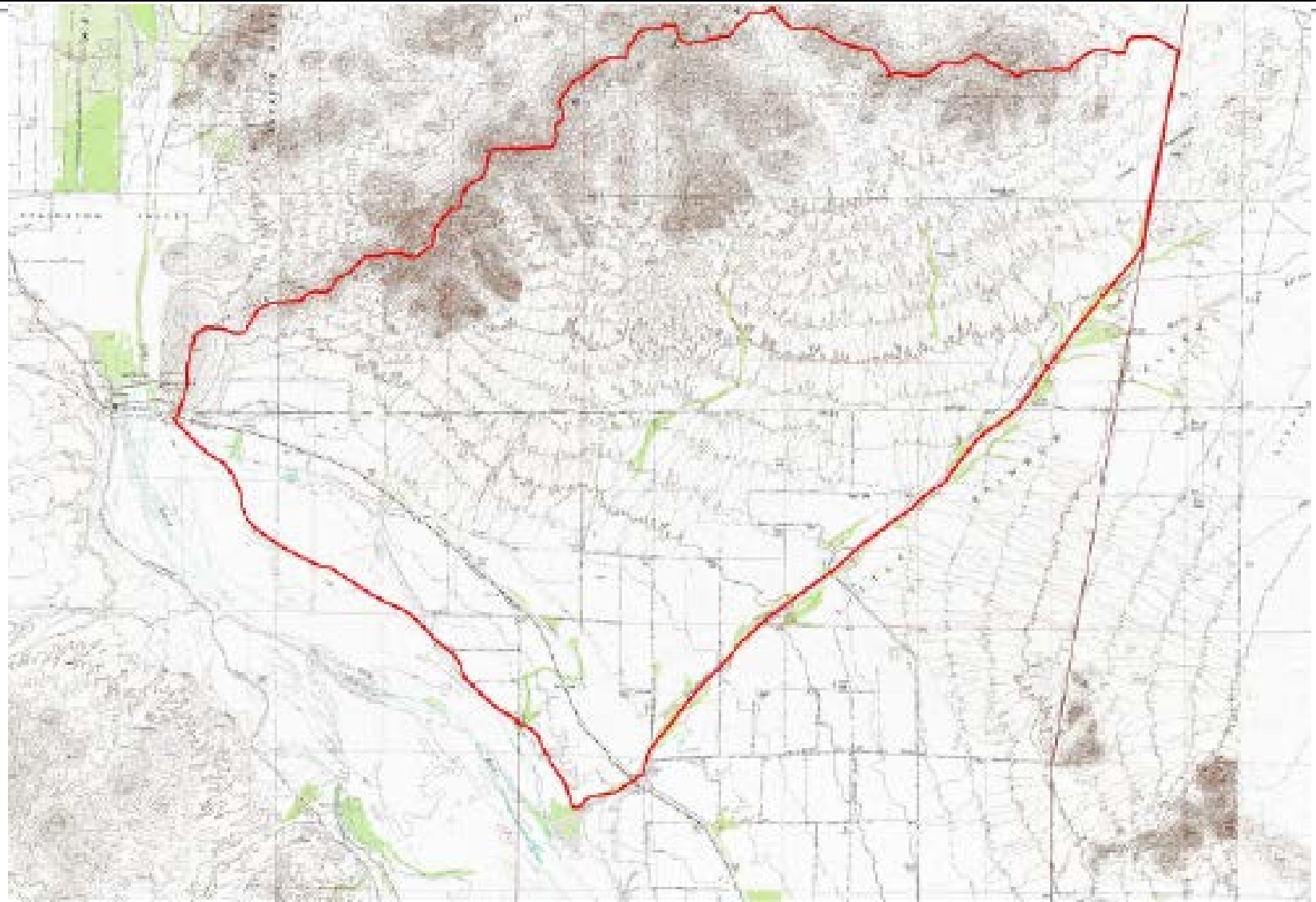
Case Example: Alluvial Fan Predictability/Predicting Potential Flood Risks
Buckeye Hills Piedmont, Maricopa County, AZ

Joint Panel on Alluvial Fans: Mapping a Moving Target

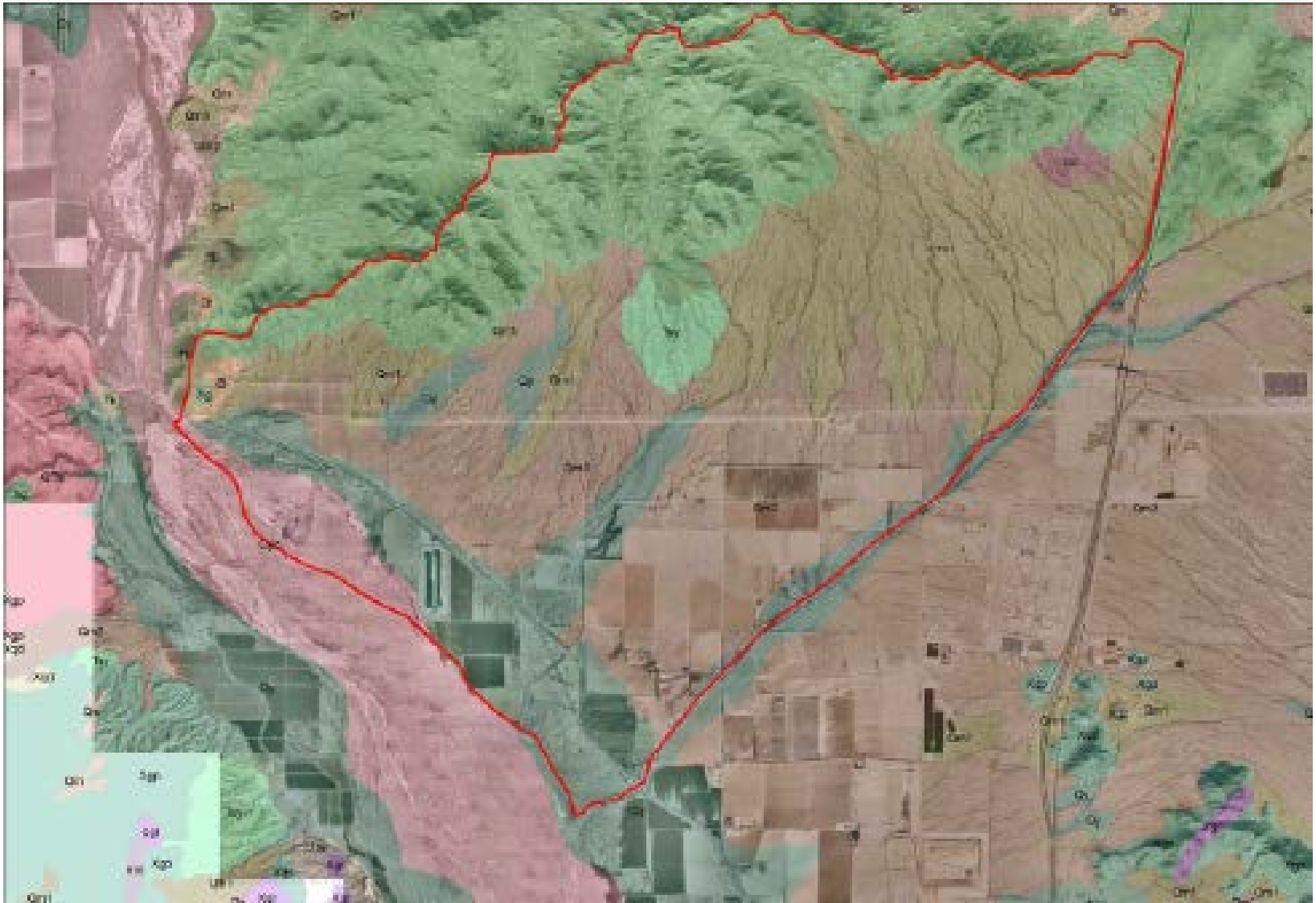
Buckeye Hills: Predictability

- Tools to Assess Fan “Predictability”
 - Field Investigation
 - Aerial Photography – Historical, Recent
 - Topographic Maps
 - Surficial Geology Maps
 - Soils Maps
 - FLO₂D Modeling – Q₂-Q₅₀₀

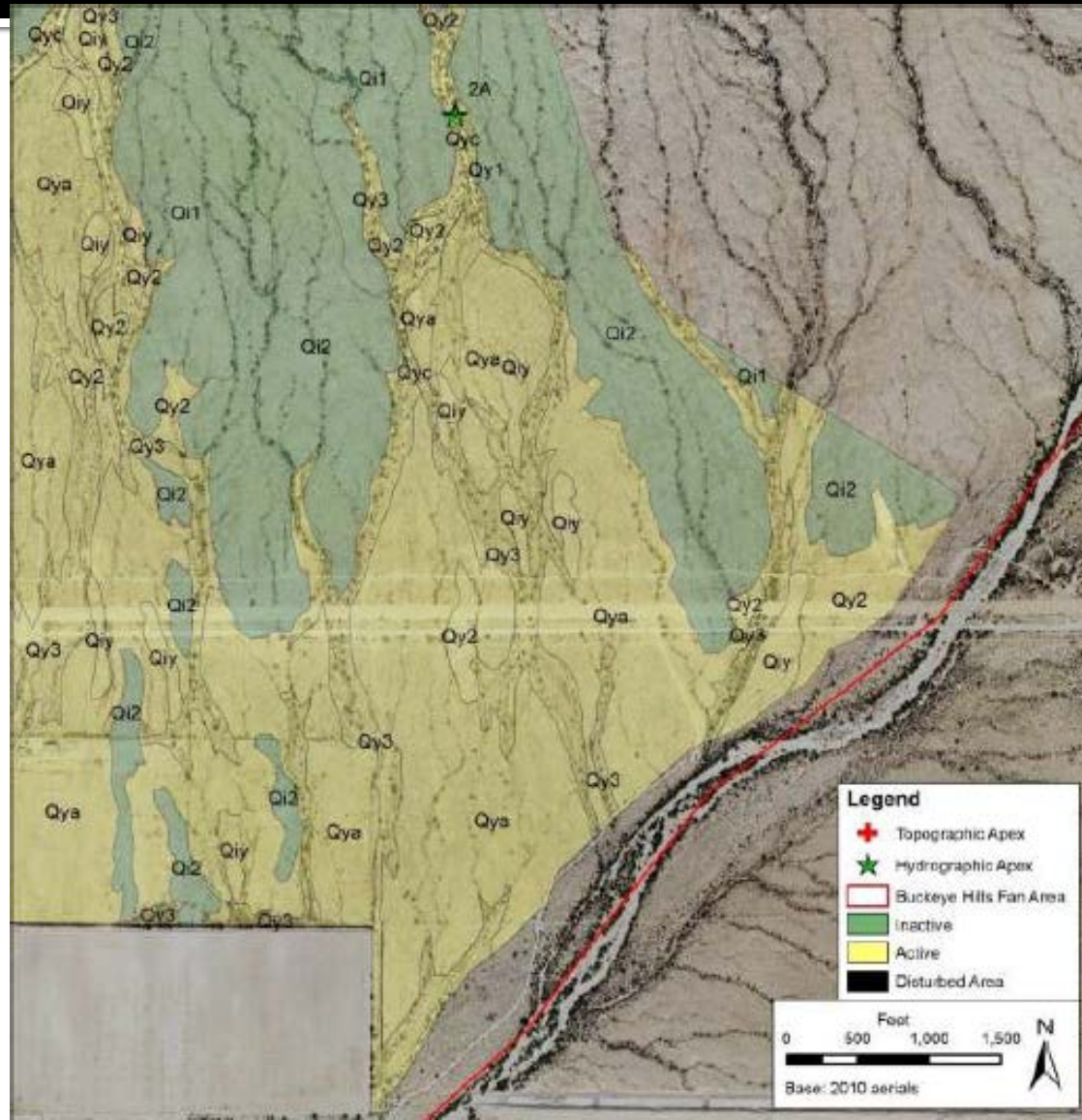
Buckeye Hills Piedmont



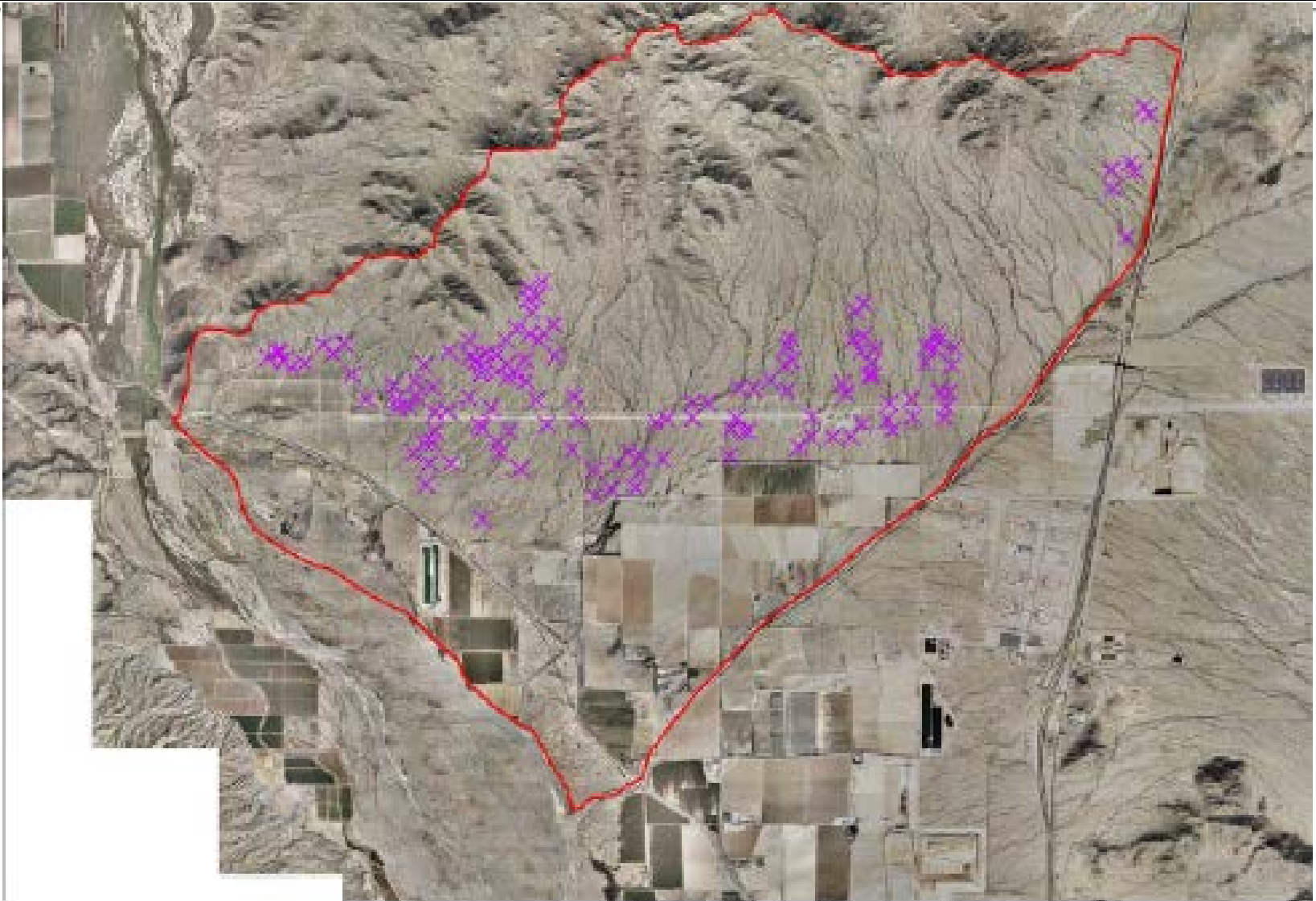
Buckeye Hills Piedmont



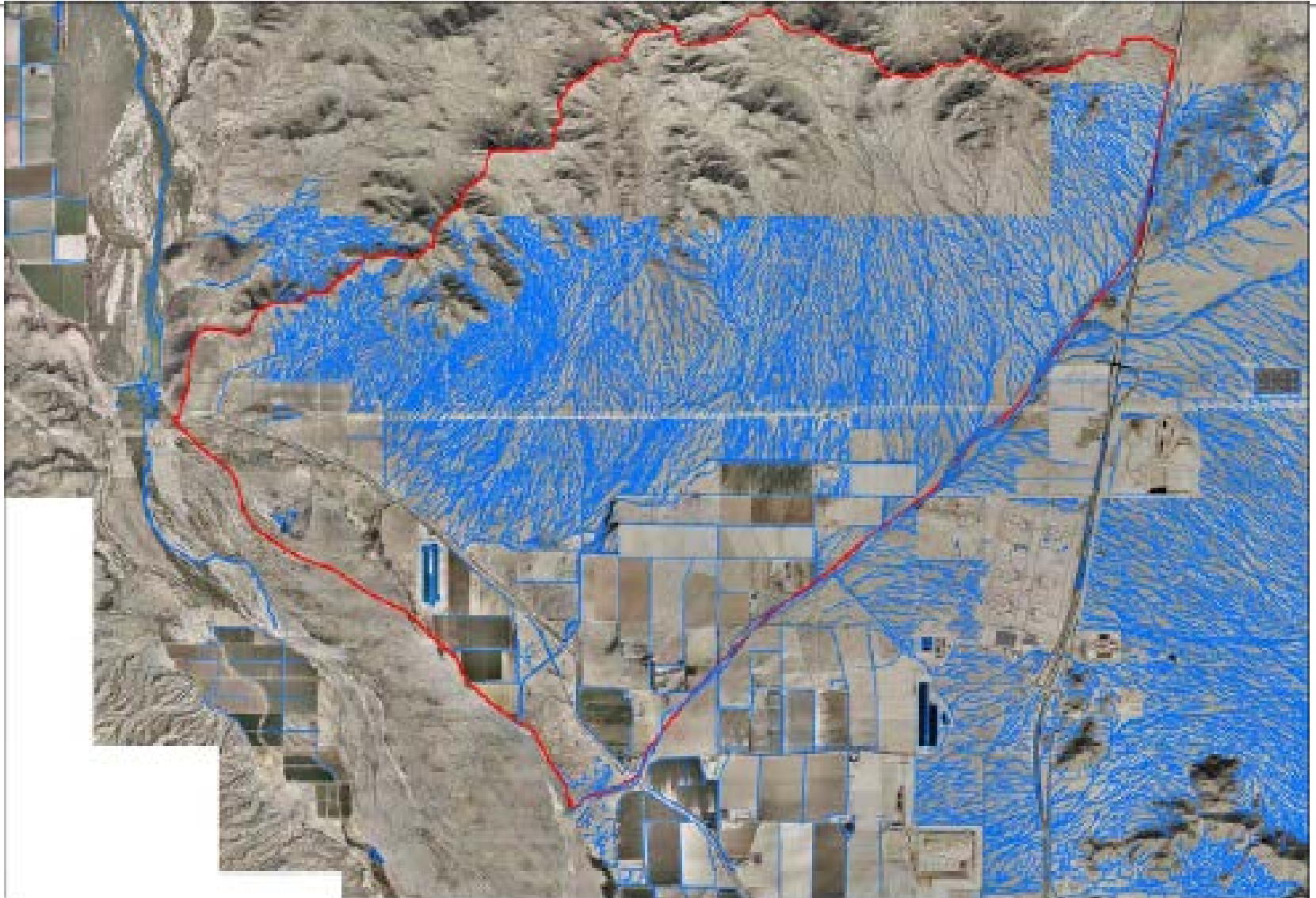
Buckeye Hills Piedmont



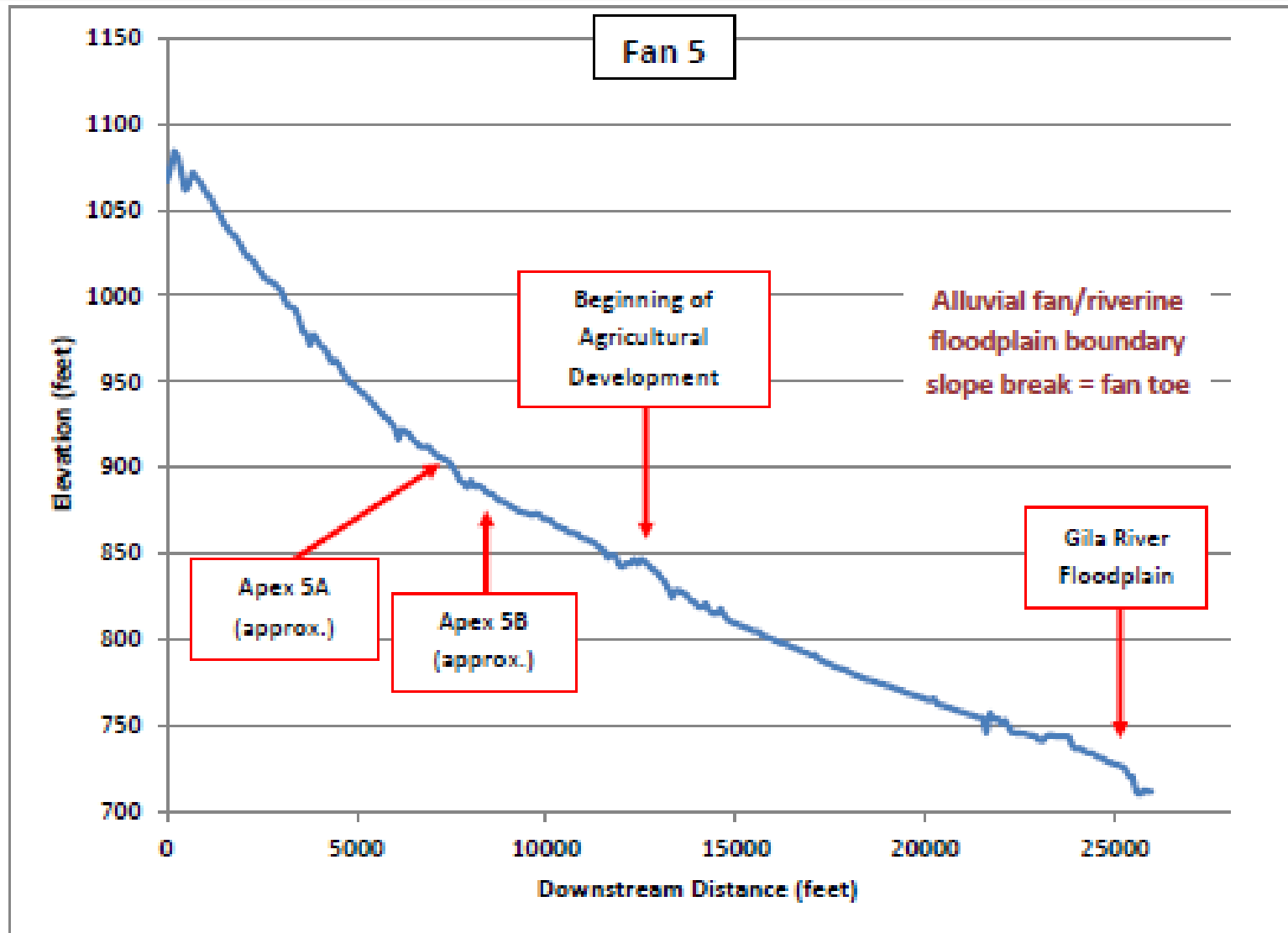
Buckeye Hills Piedmont



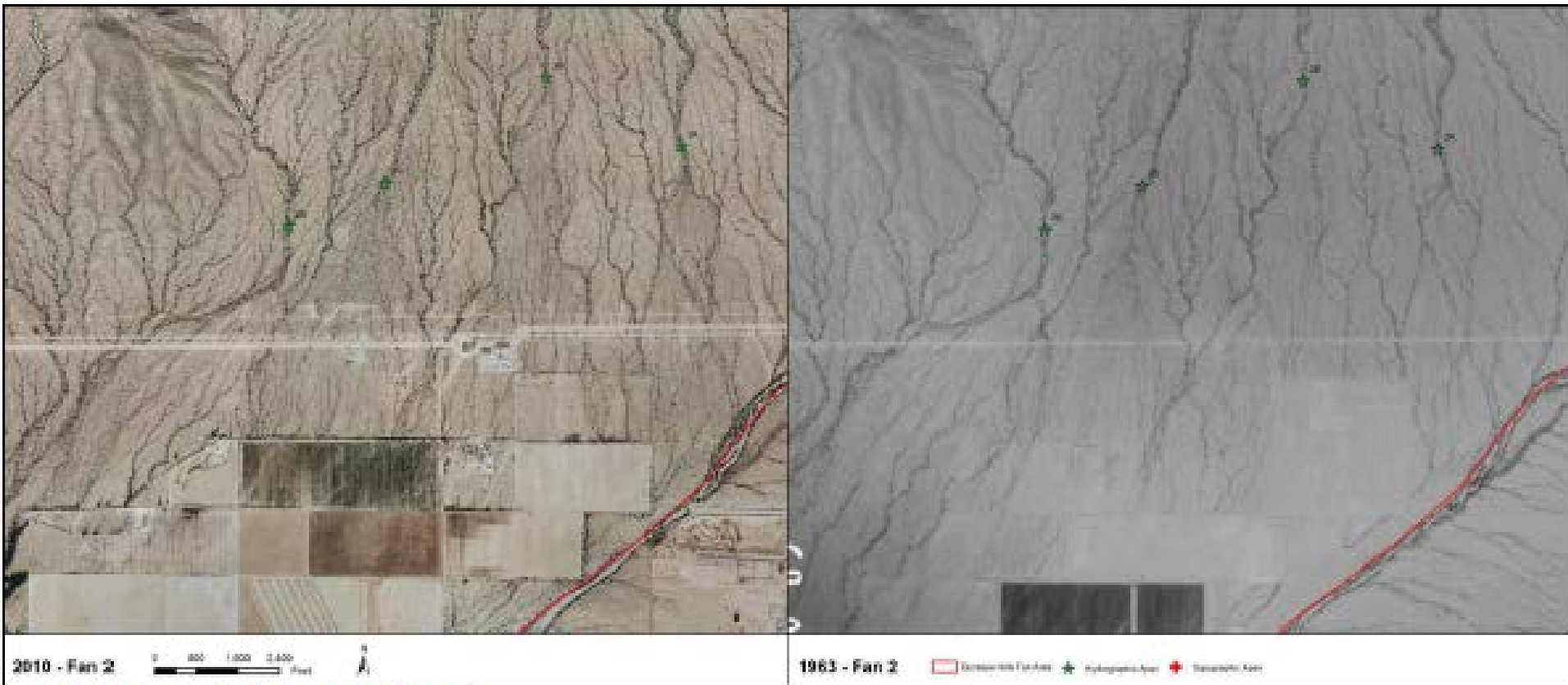
Buckeye Hills Piedmont



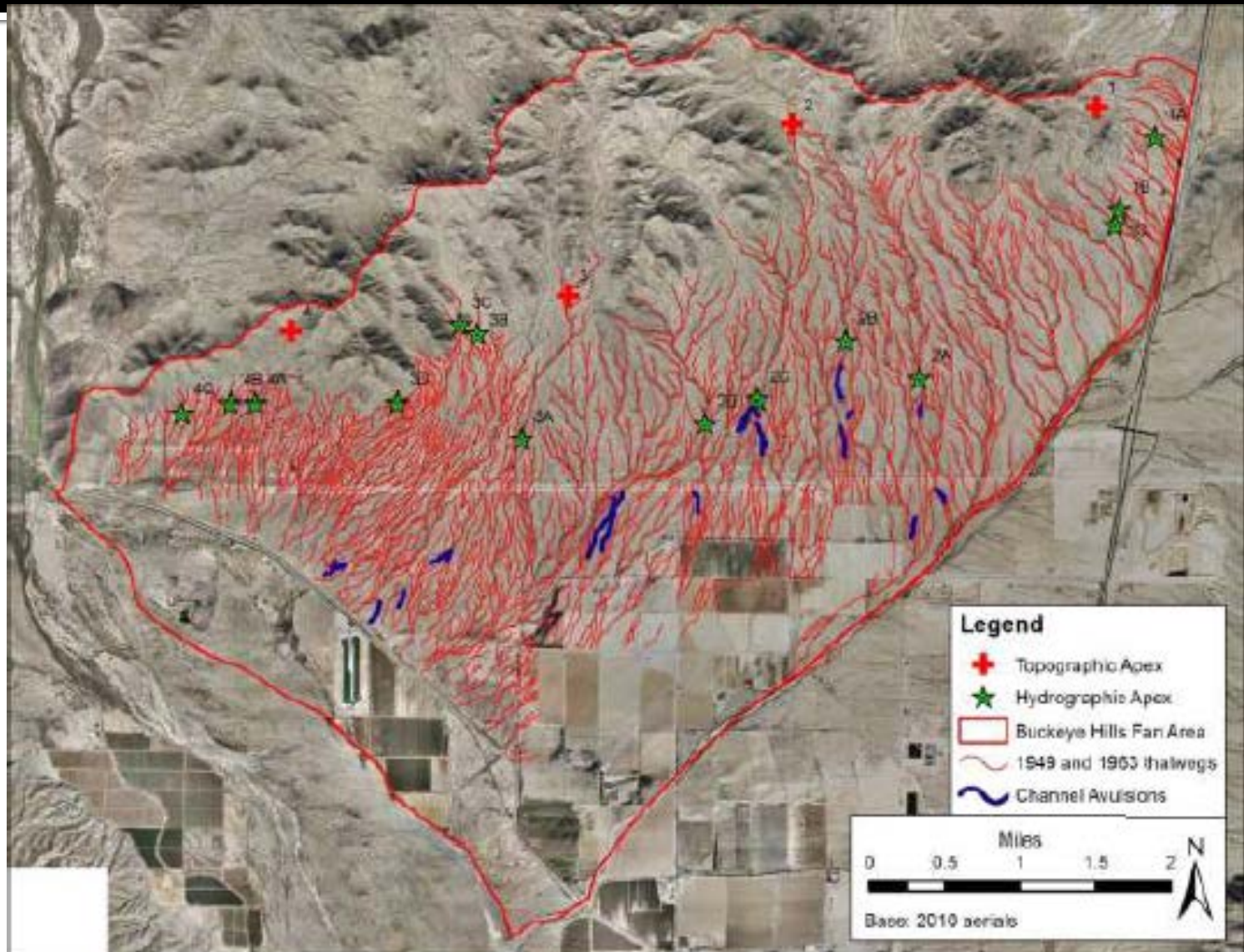
Buckeye Hills Piedmont



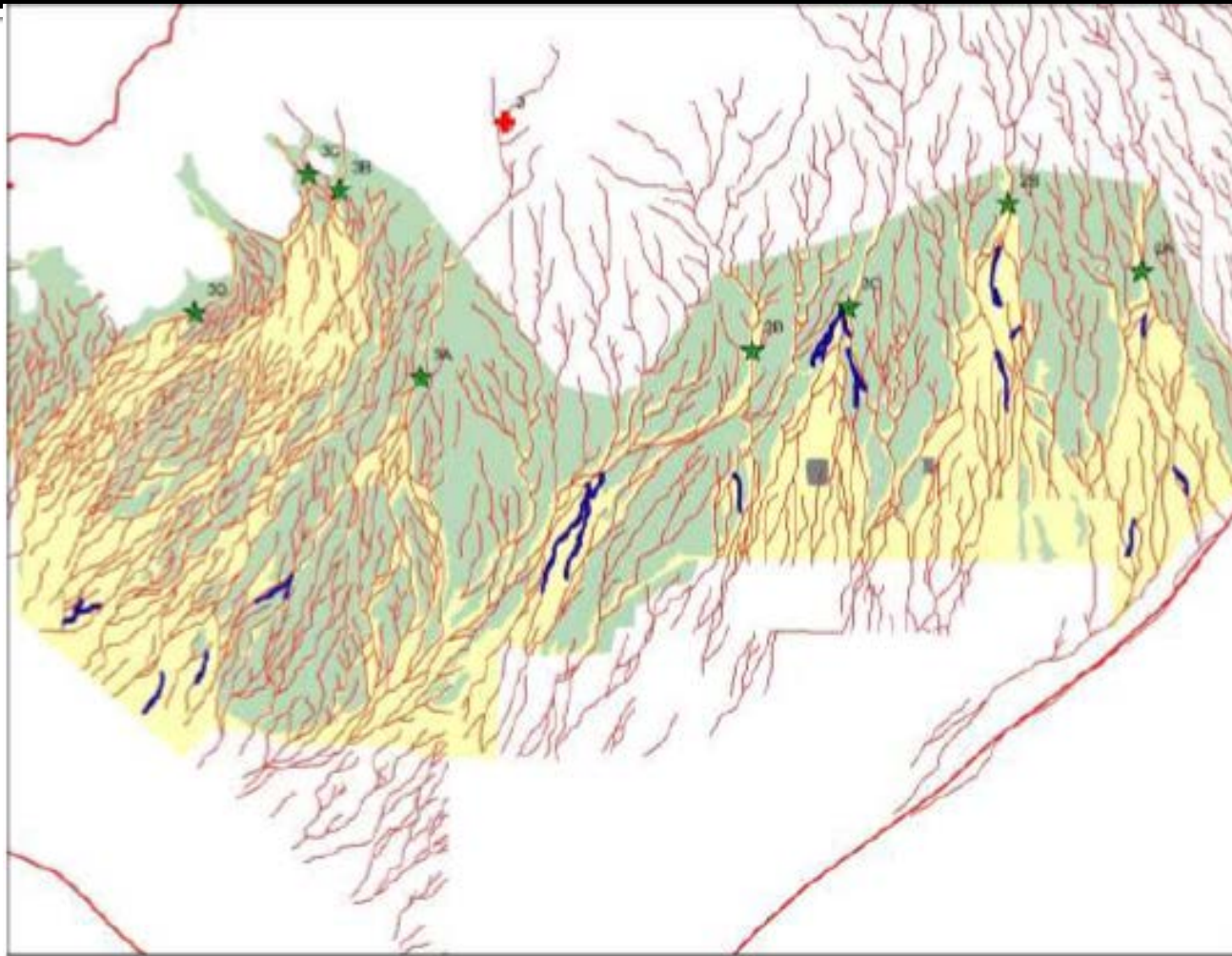
Buckeye Hills Piedmont



Buckeye Hills Piedmont



Buckeye Hills Piedmont



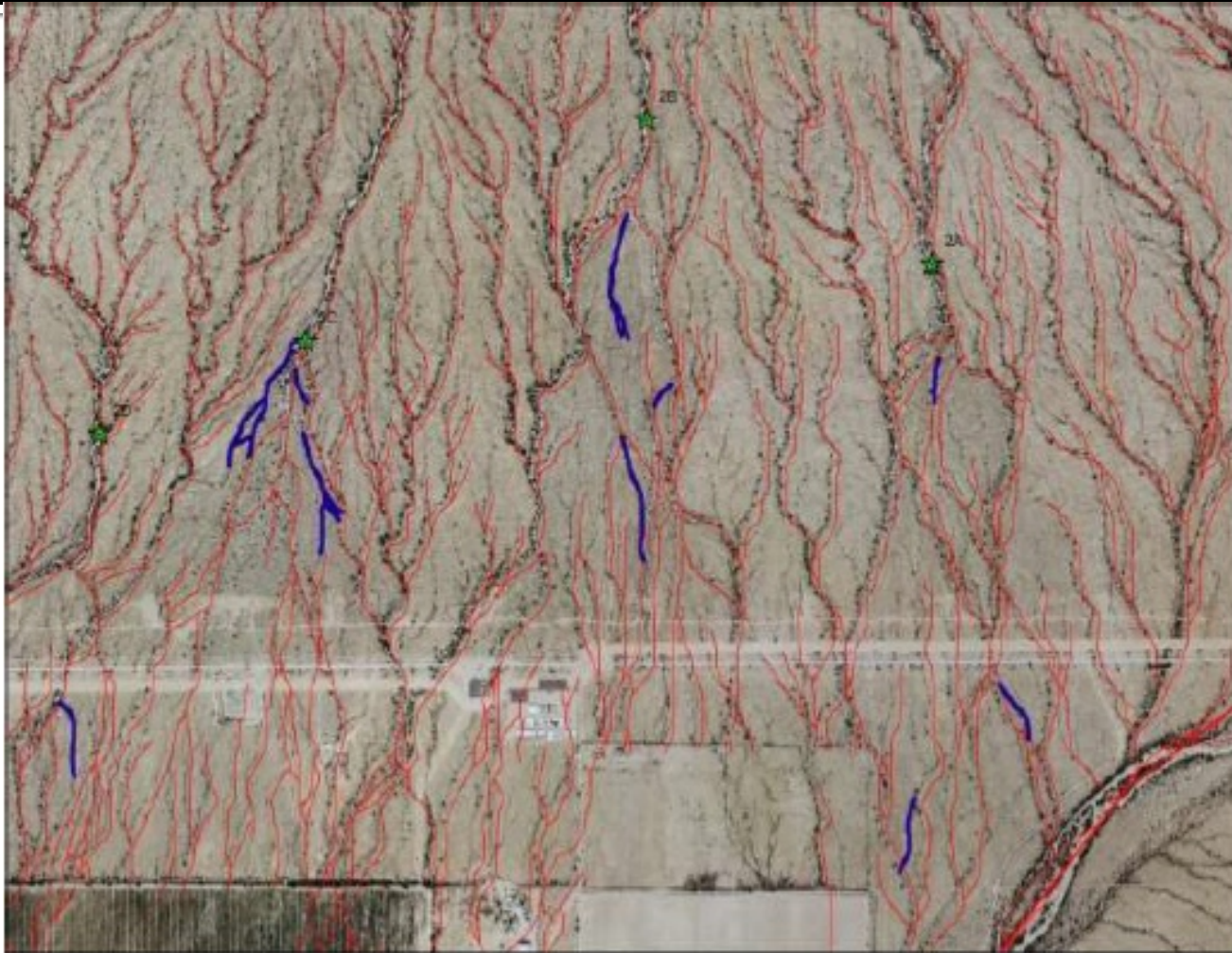
0 0.25 0.5 0.75 1
Miles

Base: 2010 aerials



- Topographic Apex
- Hydrographic Apex
- Buckeye Hills Fan Area
- inactive
- Active
- Disturbed Area
- 1949 and 1963 thalwegs
- Channel Avulsions

Buckeye Hills Piedmont



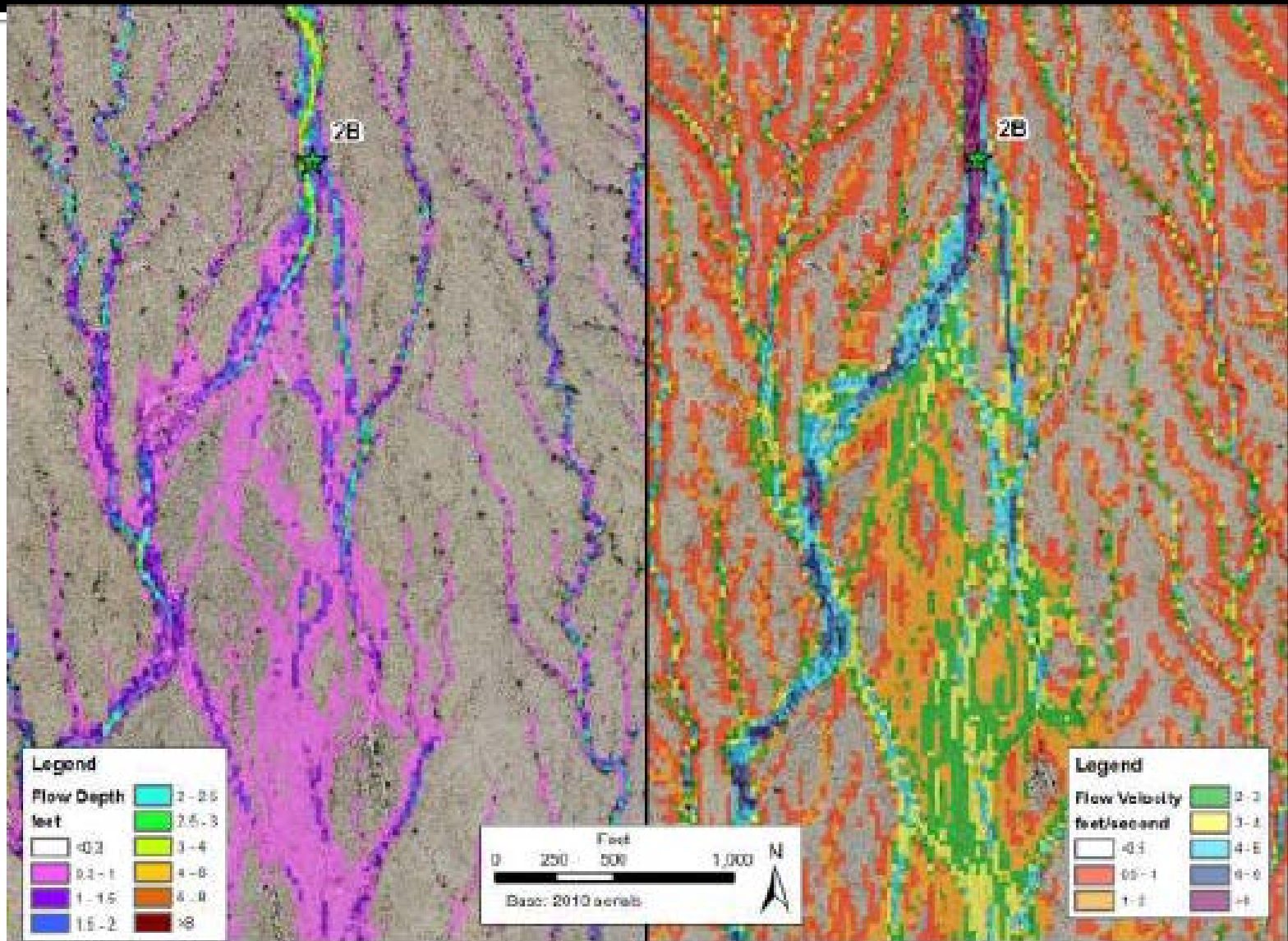
0 600 1,200 1,800 2,400
Feet

Base: 2010 aerials



- Topographic Apex
- Hydrographic Apex
- Buckeye Hills Fan Area
- 1949 and 1963 thalwegs
- Channel Avulsions

Buckeye Hills Piedmont



Buckeye Hills Piedmont

- Final Steps
 - Avulsion Risk Analysis (Fuller, 2012, AZGS Report)
 - FLO2D Modeling – Virtual Levee Method
 - Composited Depths
 - More Conservative Than FAN Model
 - Assignment of Flood Zones