Using High Resolution, High Accuracy Topography Data to Improve Water Management on the High Plains Aquifer

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A current, high-quality, state-wide elevation dataset suitable for the majority of needs, available and accessible to all

Goal:

It took a decade...

Our goal is in view!

Can LiDAR improve Water Management? { On the High Plains Aquifer?
Basic Irrigation Design and Management
• Prevent runoff and deep percolation losses
  - Deep Percolation
  - Soil type and retention properties
  - Crop root zone
• Runoff
  - Soil type, surface cover, tillage, and slope
  - Antecedent water events
  - Crop type, population density, and row spacing

Baseline Irrigation Prescription
• Irrigation = f min(runoff, deep percolation)
• Estimate maximum irrigation depth to prevent runoff and deep percolation for each zone
• Select minimum of the two

Sub-Pelcal Scale Watersheds

LiDAR: Small Watersheds

Topographic Map

Flow Accumulation

Bushels/Acre
0 - 74
74 - 112
112 - 150
150 - 188
188 - 226
Thank You!

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