

# GeoWEPP ArcGIS 10.1 for soil erosion project

## *Development Team*

**Haoyi Xiong – Application leading developer**

Jonathan Goergen - Application co-lead developer

Misa Yasumiishi - Webpage developer

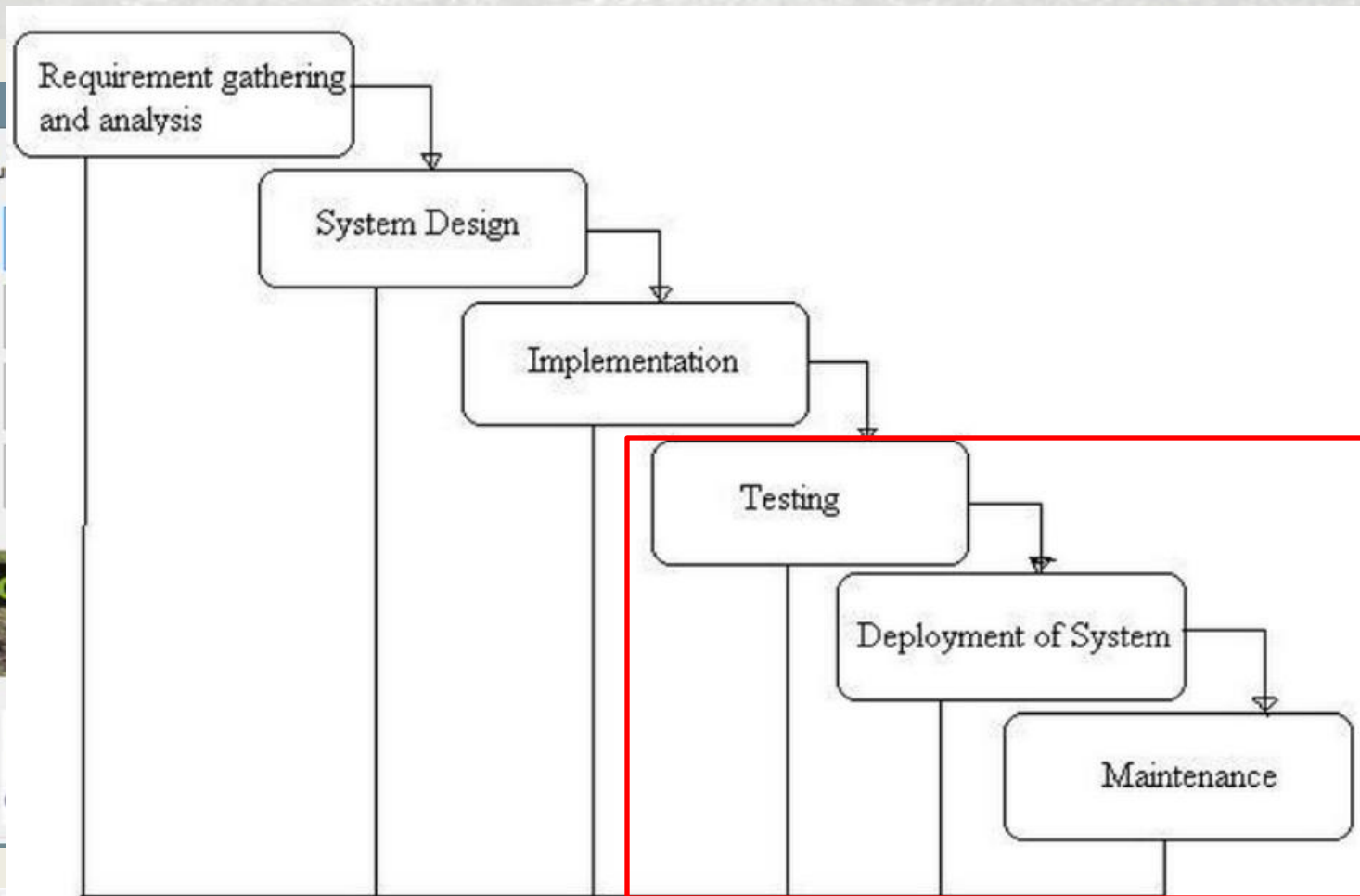
Martin Minkowski - GeoWEPP ArcGIS 9.x developer (ESRI Project Engineer now)

Chris Renschler - Project Leader

LESAM Lab Team

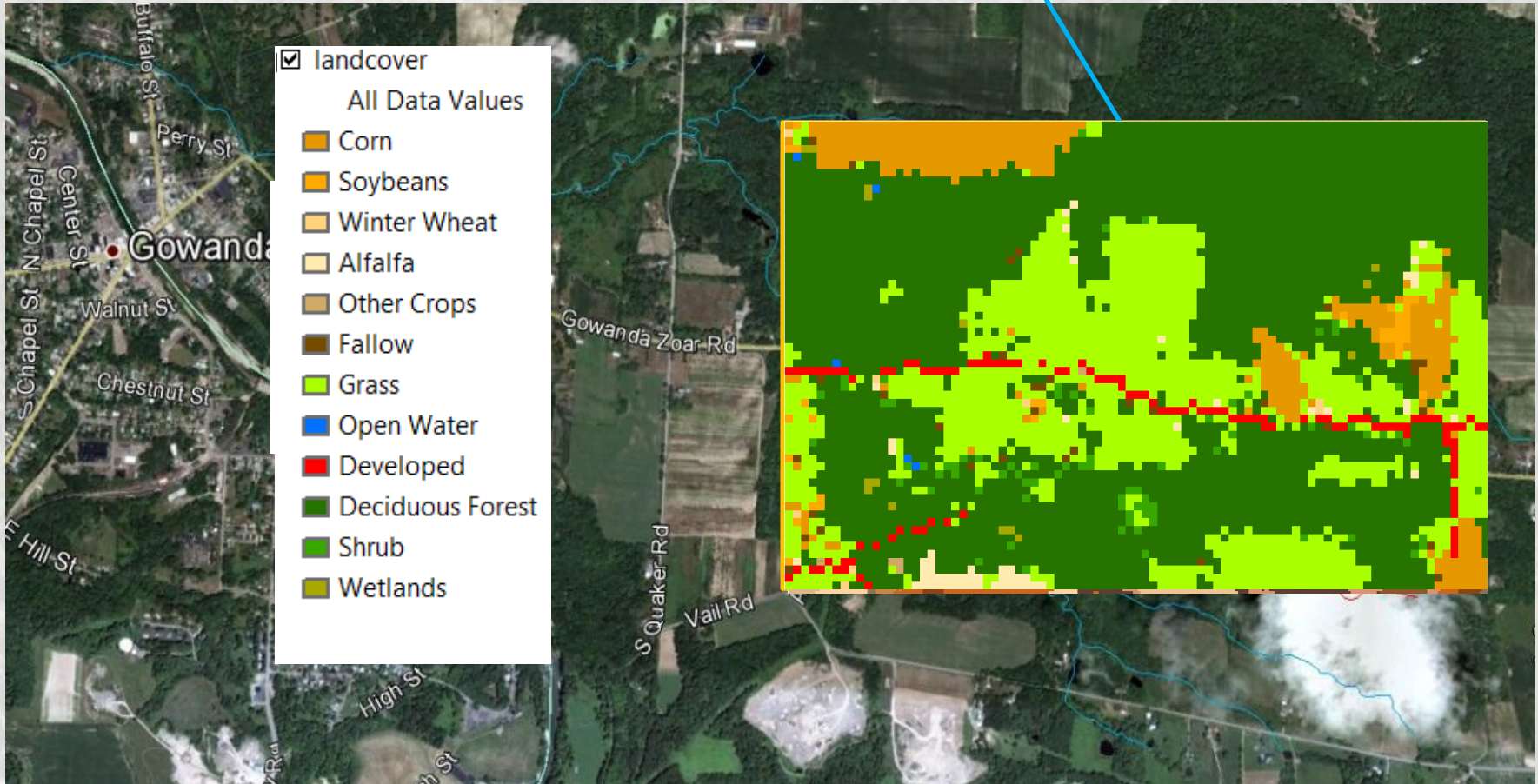
# Software Development

- Water Fall Model as developing scenario



# Study Area

- Goal:
1. simulate the red part stream
  2. reduce runoff for the farmland area



East of Gowanda, NY

Data source: USDA



# Environmental modeling with GeoWEPP (GeoWEPP extension - stream customization)

Climate Selector

**Closest Climate Station to Outlet Point**

GOWANDA ST HOSPITAL NY

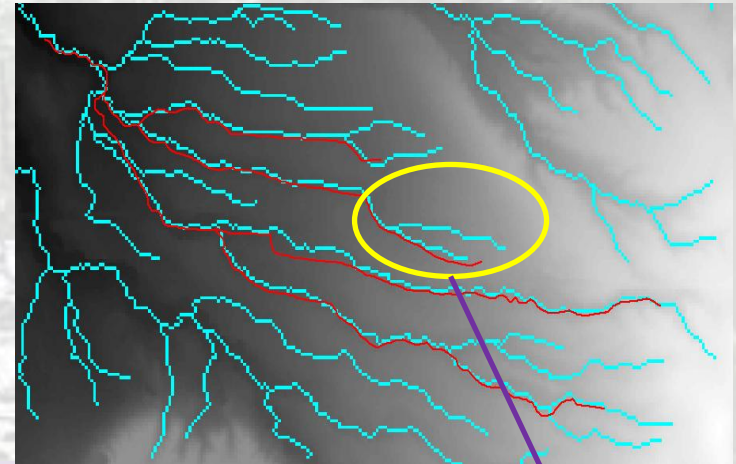
**Or Select a Different Station Below**

State Name   
Station Name

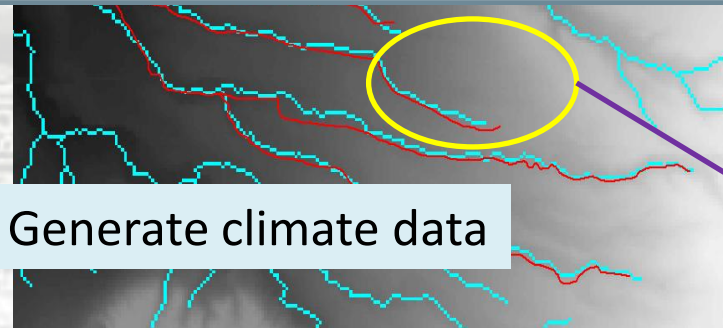
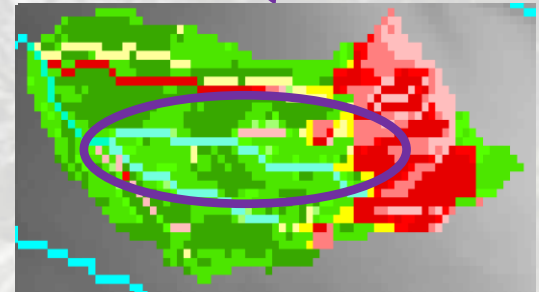
**Or Use Your Own Climate Parameter File**

Own File

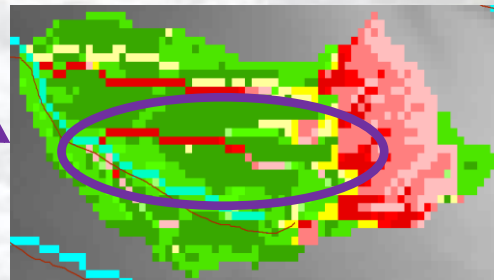
GeoWEPP without customization



Watershed  
Catchments  
Erosion  
Prediction



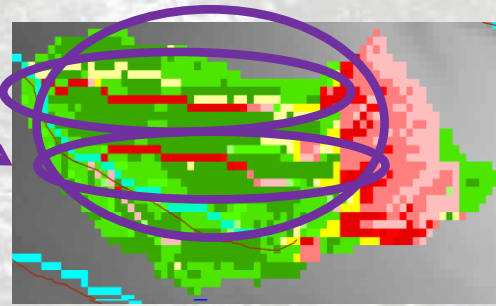
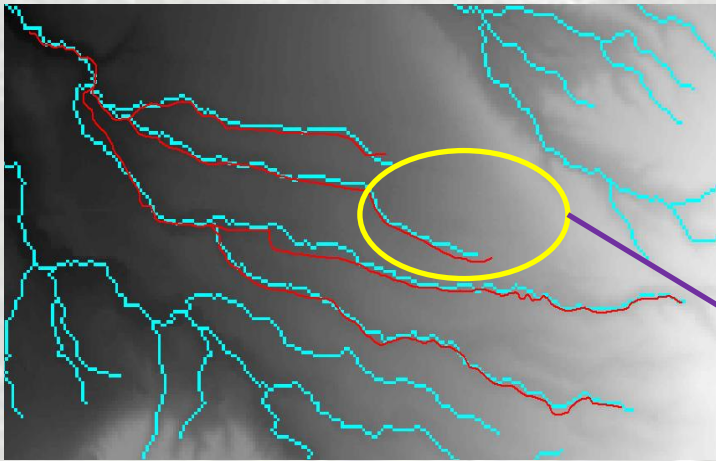
Generate climate data



# Onsite assessment for best landuse management practice

Soil Loss (Tons/year): 20.2 → 9.8

Runoff Volume( $m^3/year$ ): 5316.2 → 4891.1



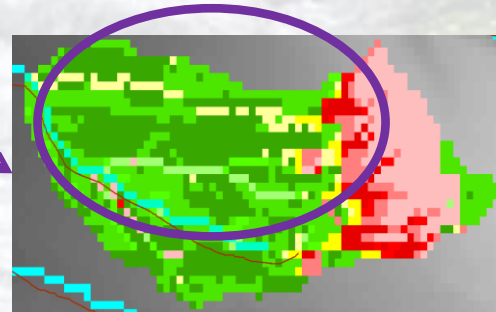
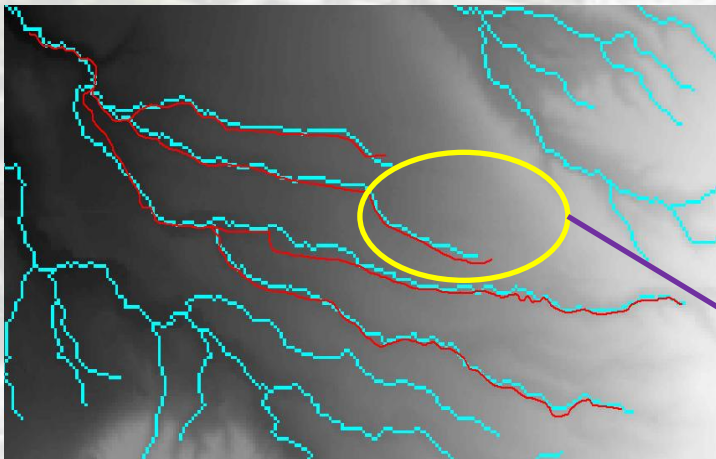
Target high erosion place



Plant trees as buffer on these place



Generate new erosion pattern





# References

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- Renschler, C.S., and D.C. Flanagan (2008) Site-Specific Decision-Making Based on GPS RTK Survey and Six Alternative Elevation Data Sources: Soil Erosion Prediction. *Transactions of the ASABE* 51(2):413-424.[2009 ASABE Superior Paper Award]
- Renschler, C.S., and Lee, T. (2005) Spatially distributed Assessment of Short- and Long-term Impacts of Multiple Best Management Practices in Agricultural Watersheds. *Journal of Soil and Water Conservation* 60(6):446-456.
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