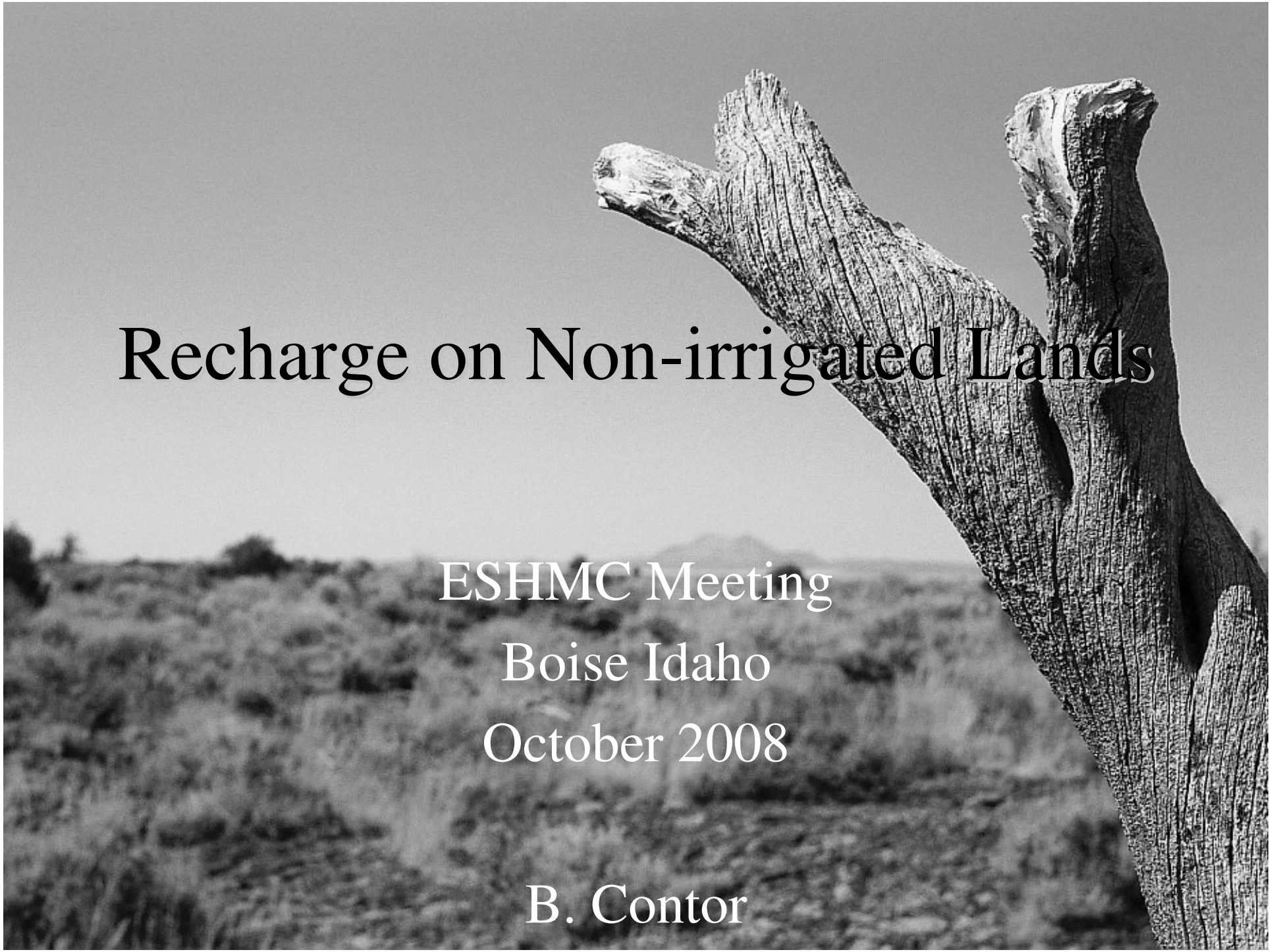


Recharge on Non-irrigated Lands

ESHMC Meeting

Boise Idaho

October 2008

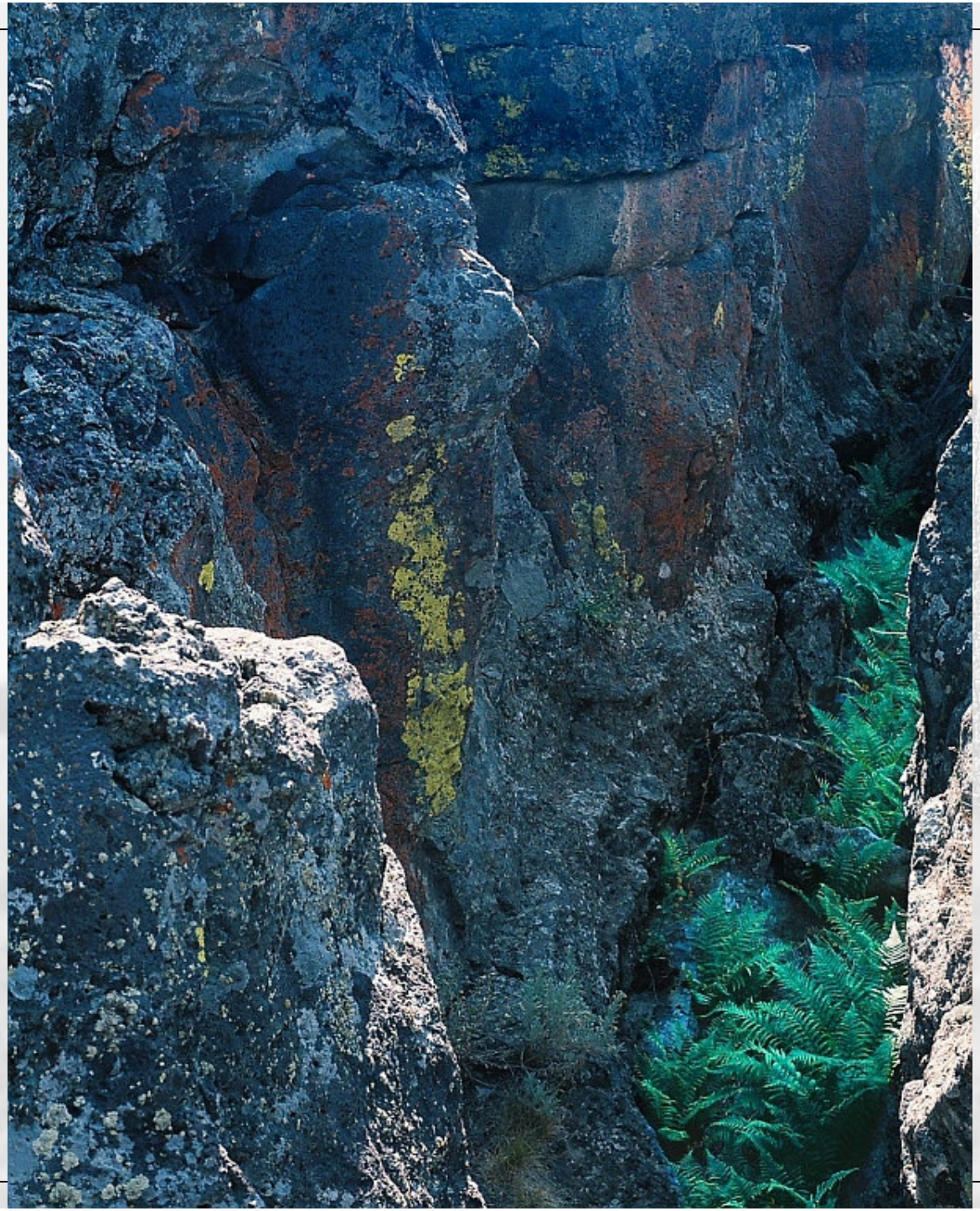
B. Contor

On-Farm Water Budgets

ESHMC Meeting

October 2008

B. Contor



I. Quick Review

Two Components

- Non-irrigated dry lands
- Minor land cover types
  - dry farms
  - wetlands
  - cities & industrial

ESHMC Decision early 2008

- Minor land cover types
  - Dry Farms:
    - Eliminate as a separate class, call these lands "deep soil non-irrigated dry land"
  - Wetlands:
    - Use Rick Allen ET Idaho values
    - Use Fixed-point capability of Rech. Tool
  - Cities:
    - Use ESPAM1.1 values
    - Use Fixed-point capability of Rech. Tool

ESHMC Decision early 2008

- Non-irrigated dry lands: Matrix of Possibilities Discussed

	Existing PEST Capability	PESTable Executable	New Recharge Tool
ESPAM1.1 Algorithm			
New Algorithm			
ET Idaho (Allen & Robison)			

ESHMC Decision early 2008

- Non-irrigated dry lands: Matrix of Possibilities Discussed

	Existing PEST Capability w/ 9 multipliers	PESTable Executable	New Recharge Tool
ESPAM1.1 Algorithm			
New Algorithm			
ET Idaho (Allen & Robison)	✓		

ESHMC Decision early 2008

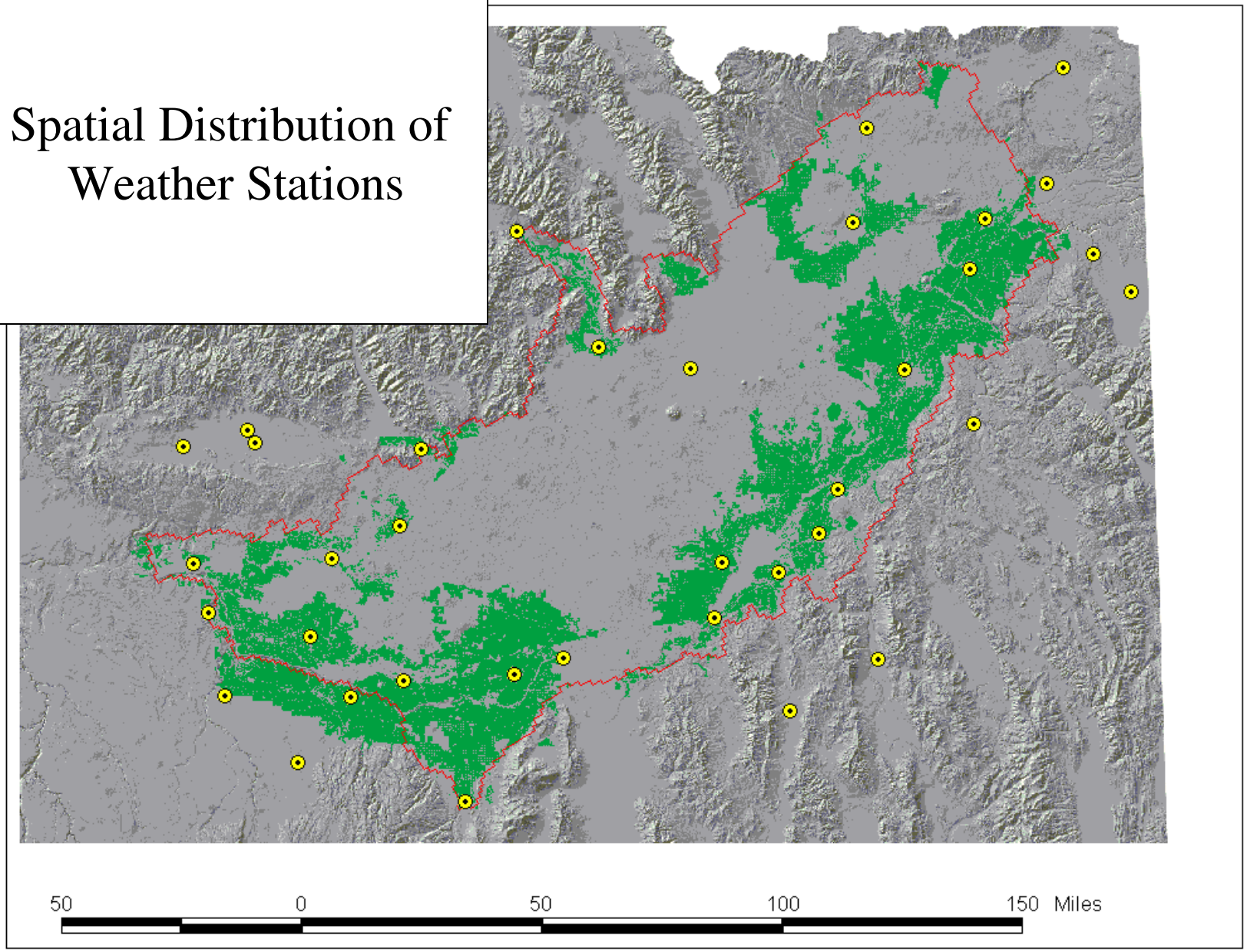
- Non-irrigated dry lands: Details
  - Use (P - Prz) from Allen-Robison (ET Idaho)
  - Use existing Rech. Tool capability
    - GIS rasters built prior to processing using triangular interpolation
    - Hand rasters to ESPAM.exe
    - ESPAM.exe makes data tables
    - Hand data tables to READINP.exe
  - 9 multipliers: 3 soil types x 3 regions

ESHMC Decision early 2008

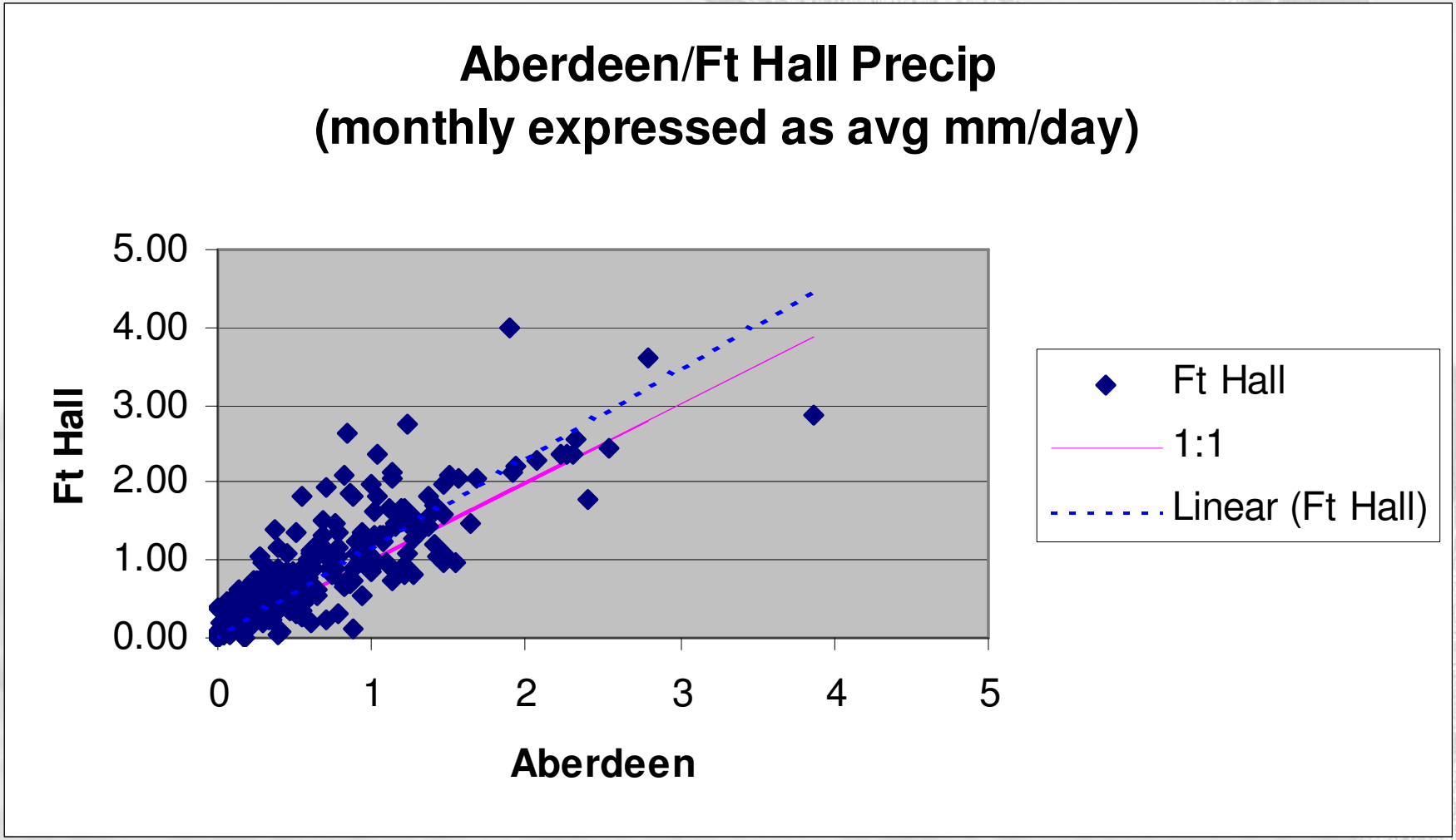
- Non-irrigated dry lands: Details
  - Bryce would work w/ Dr. Allen to select ET Idaho cover types to represent Thick, Thin, Lava Rock

II. Data Exploration

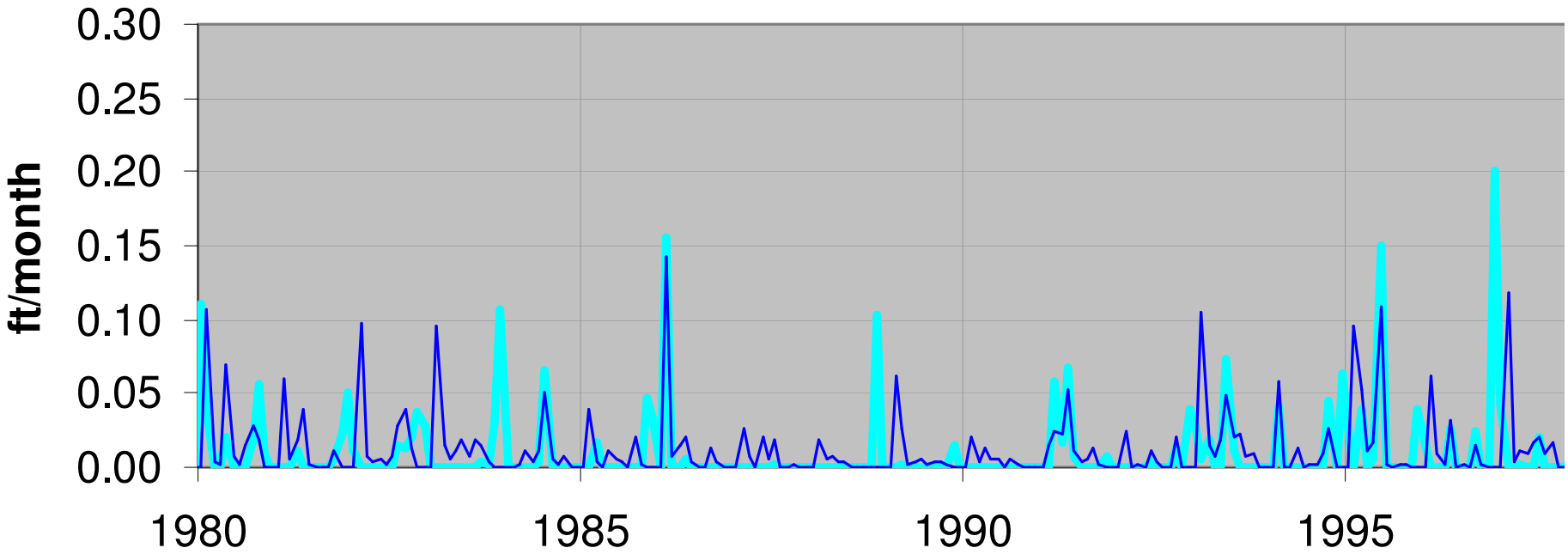
Spatial Distribution of Weather Stations



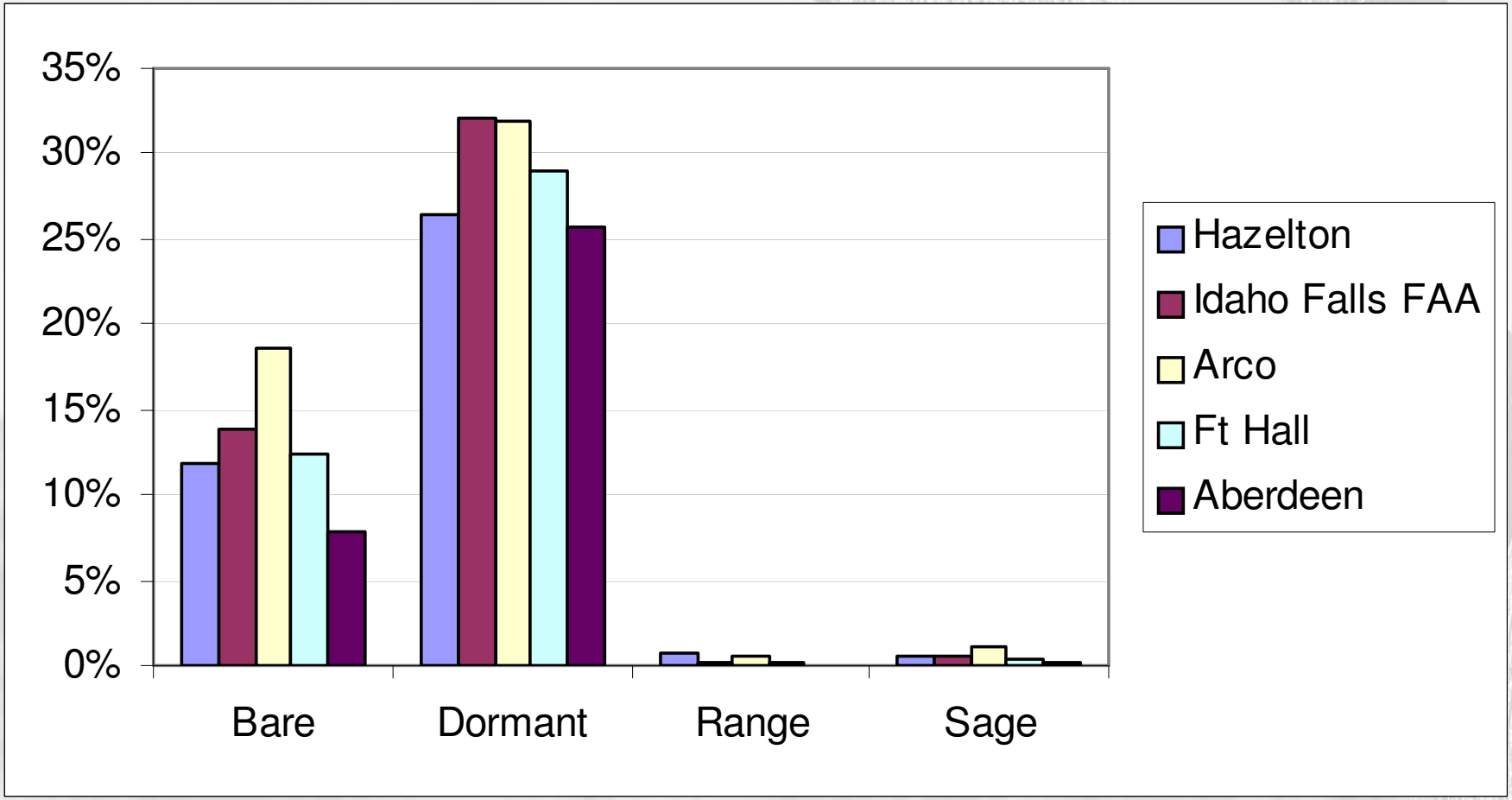
Spatial Variability of Monthly Precipitation



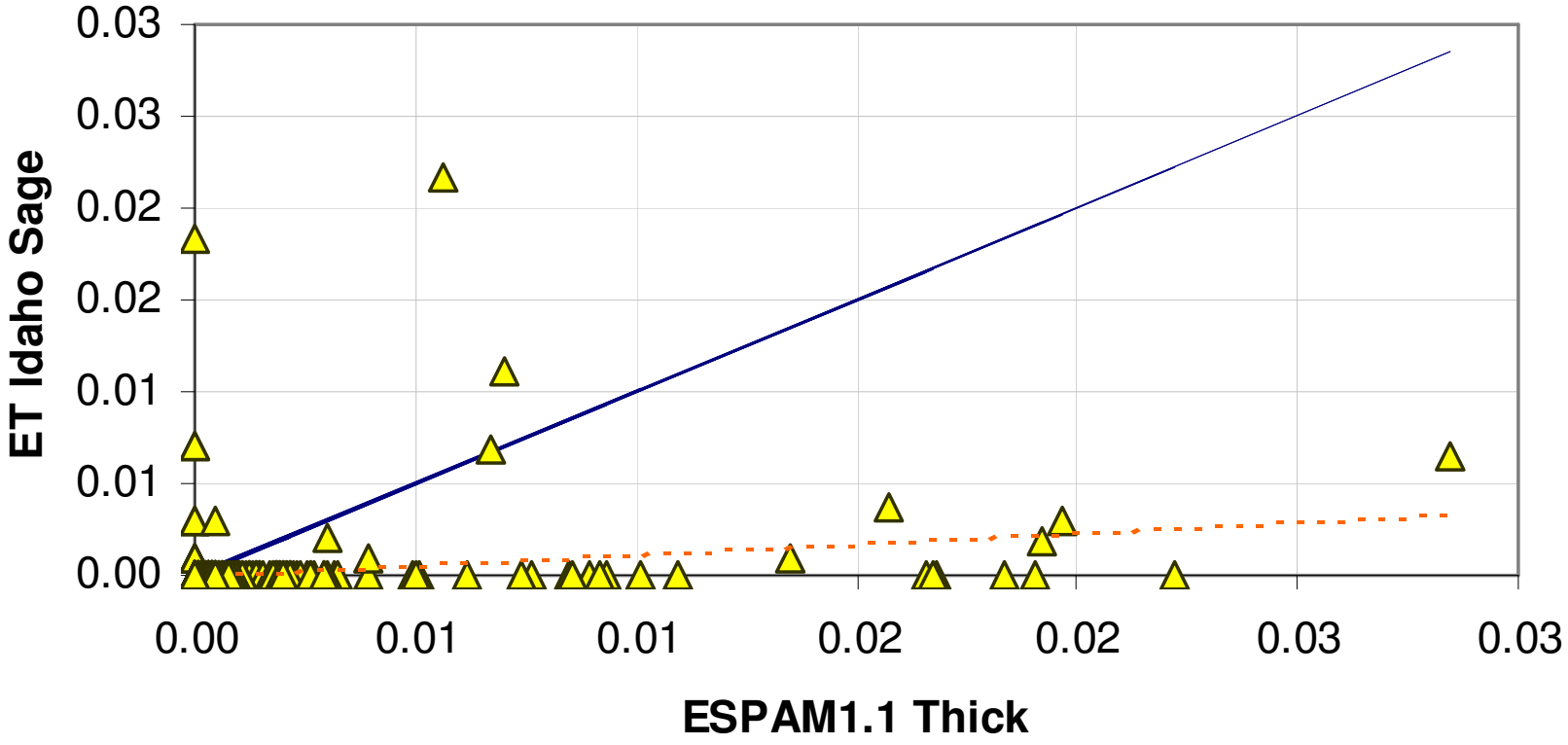
Wintertime & topographic concentration



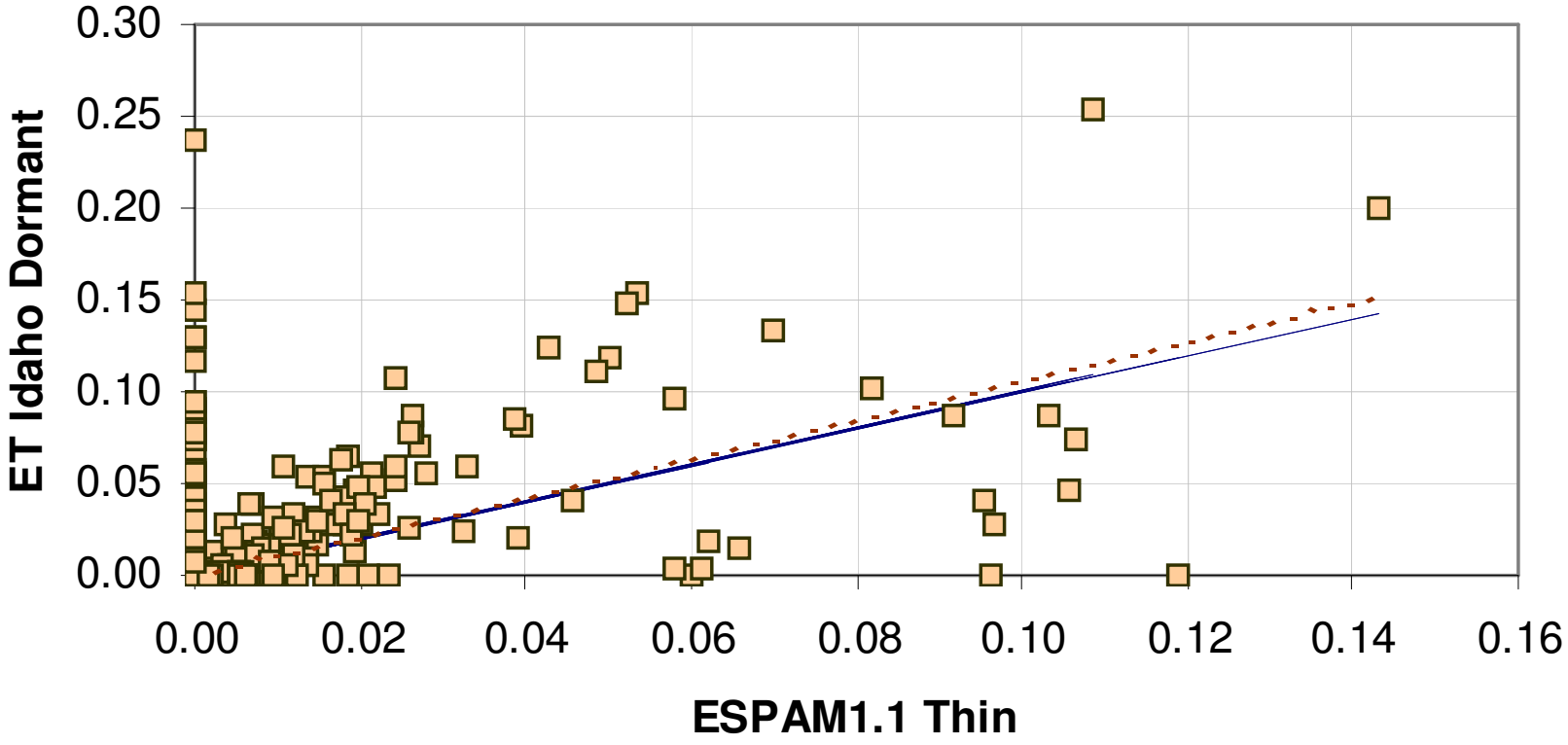
III. Selection of Cover Types



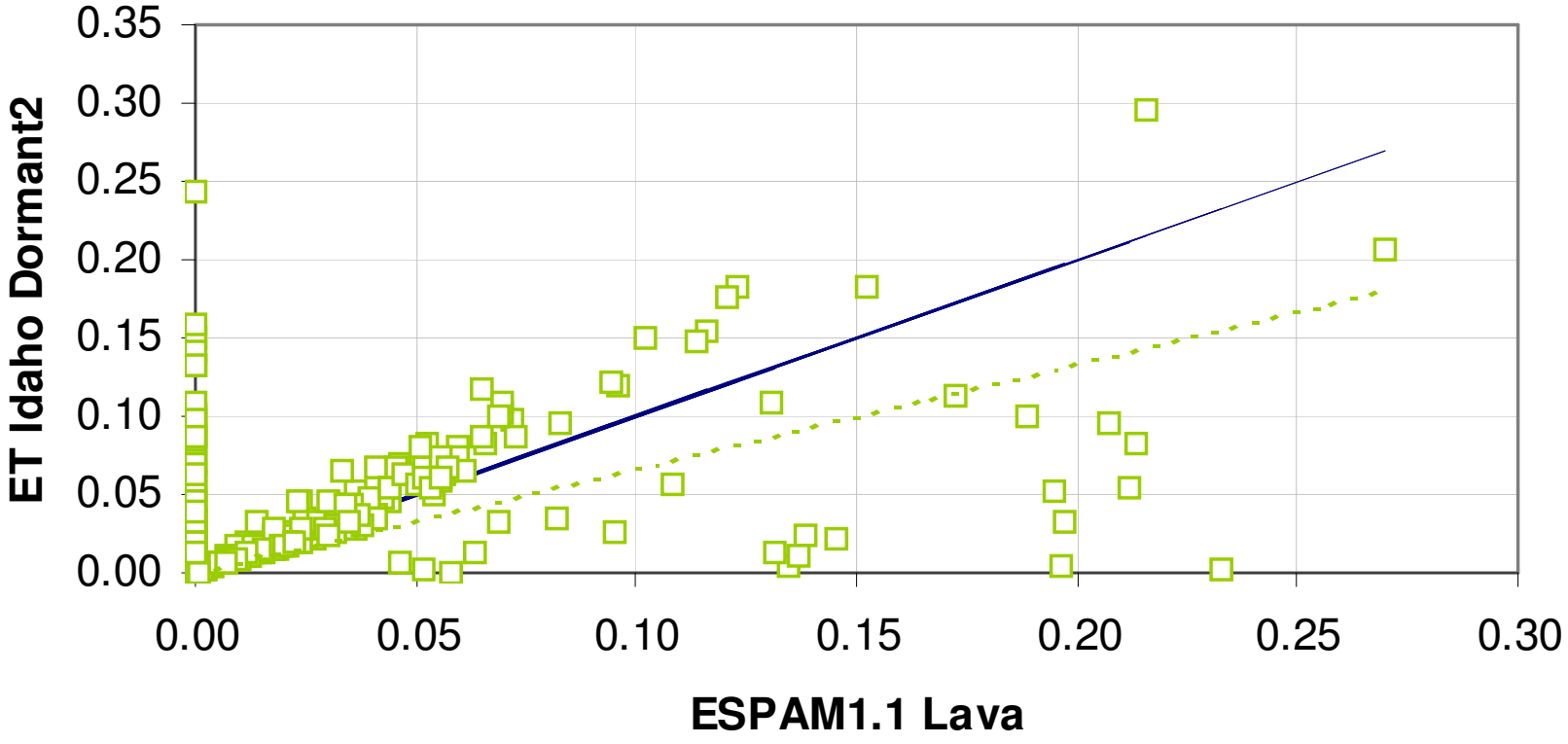
Aberdeen Monthly Non-irrigated Recharge, ft/month 1980-2004



Aberdeen Monthly Non-irrigated Recharge, ft/month 1980-2004

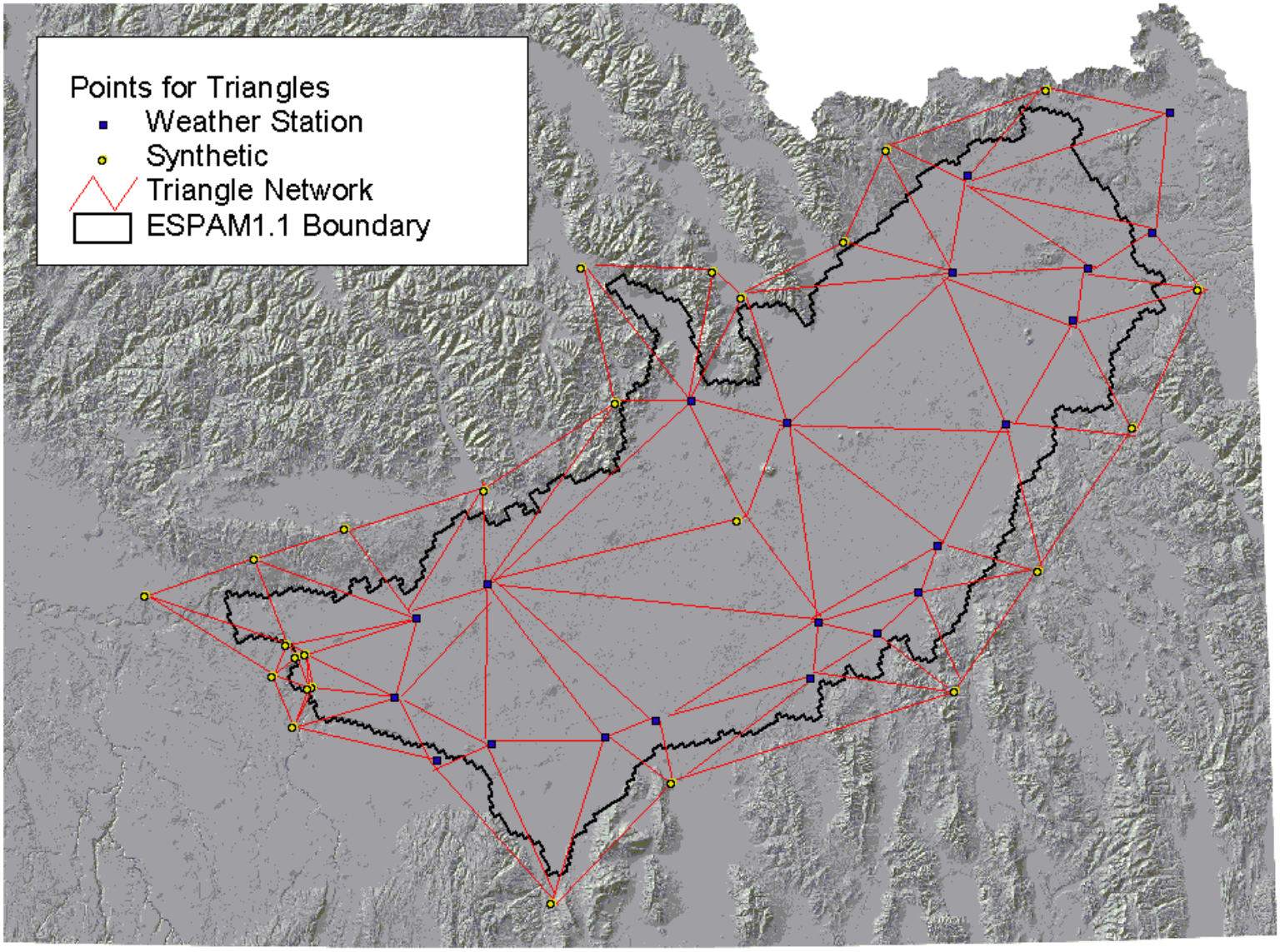


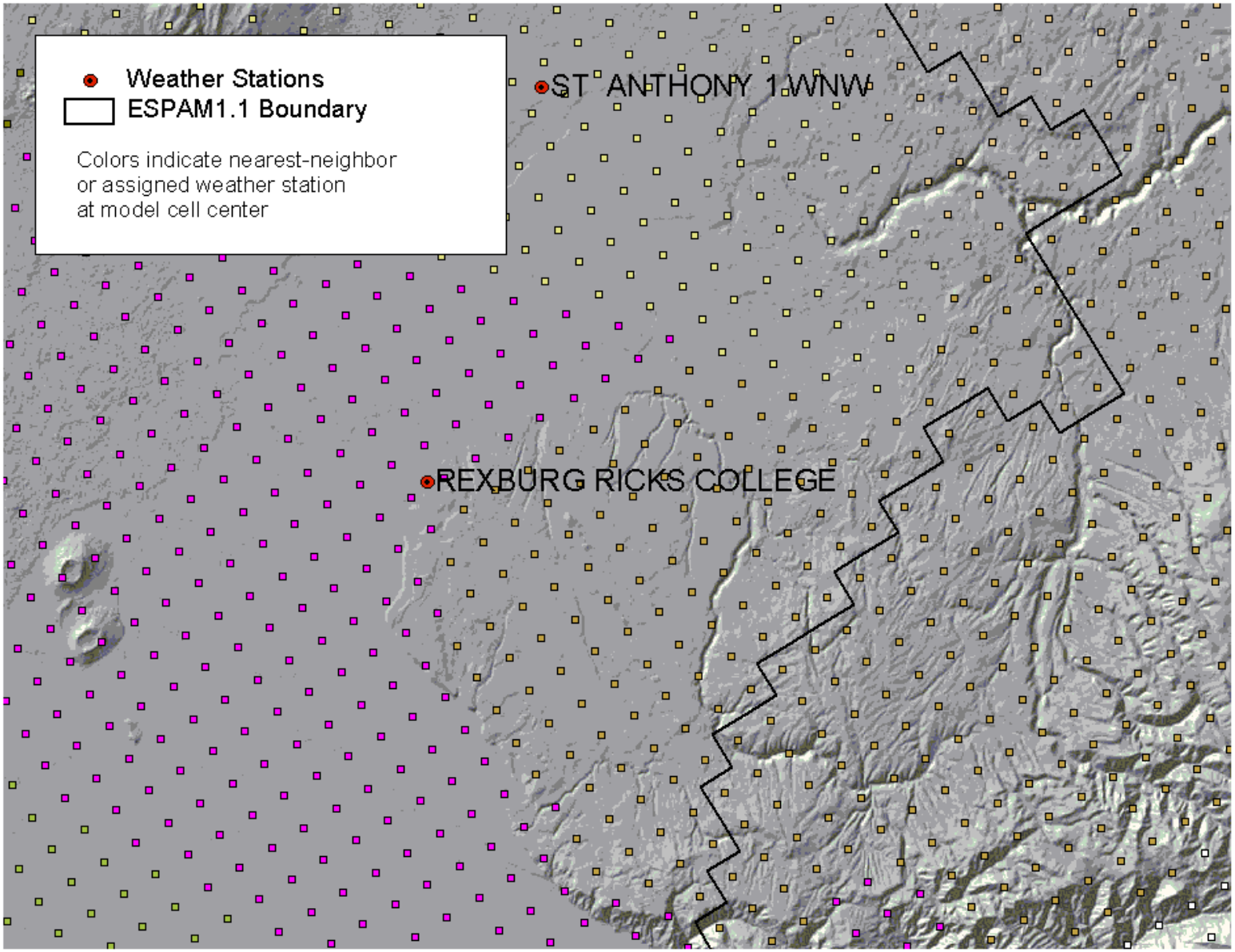
Aberdeen Monthly Non-irrigated Recharge, ft/month 1980-2004

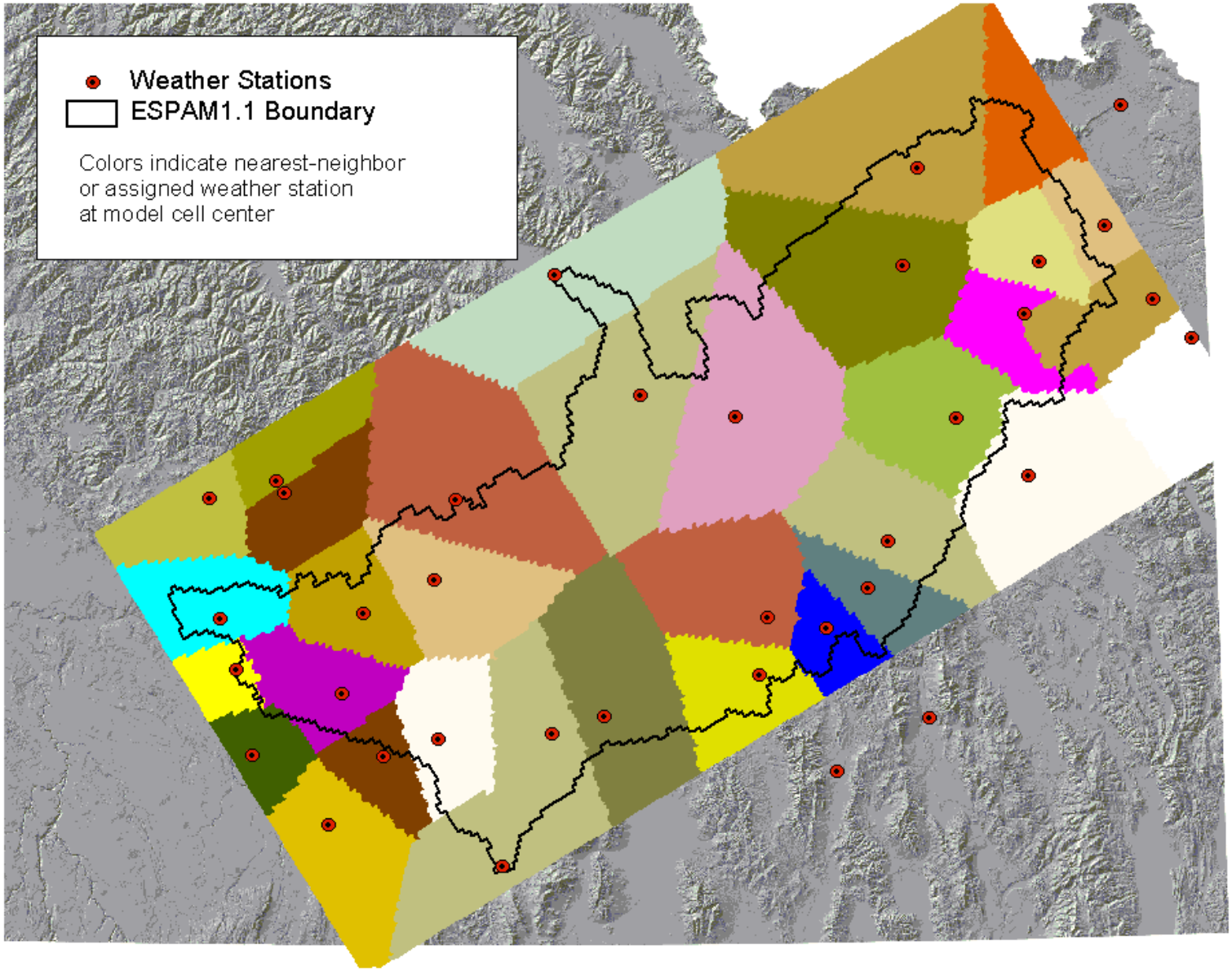


IV. Proposed Changes

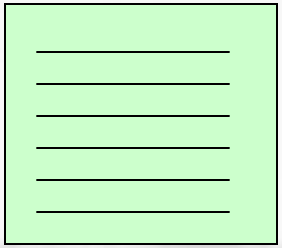
- Interpolation Method
- Data format
- Missing data


Points for Triangles
Weather Station
Synthetic
Triangle Network
ESPAM1.1 Boundary

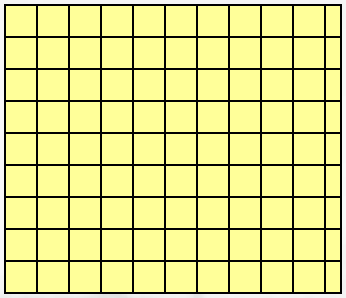

Weather Stations
ESPAM1.1 Boundary
Colors indicate nearest-neighbor
or assigned weather station
at model cell center
ST ANTHONY 1 WNW
REXBURG RICKS COLLEGE


Weather Stations
ESPAM1.1 Boundary
Colors indicate nearest-neighbor
or assigned weather station
at model cell center

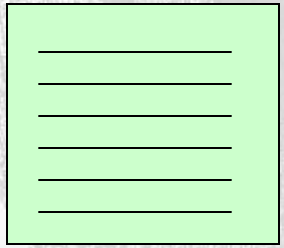
Original Plan:



Data tables calculated from Allen-Robison



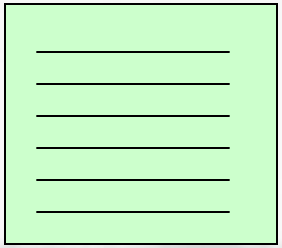
Convert to GIS Rasters for input to ESPAM.exe



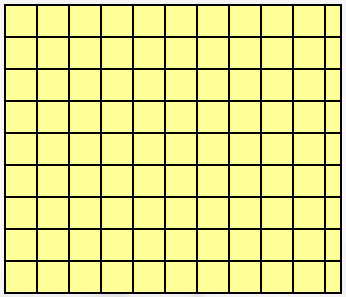
Use ESPAM.exe to convert back to Data Tables for READINP.exe

Implications:

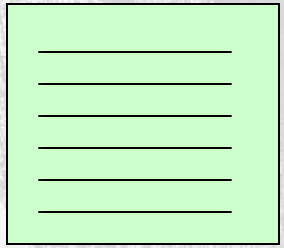
- 756 Opportunities to Blunder
- Inefficient Use of Resources



Data tables calculated from Allen-Robison

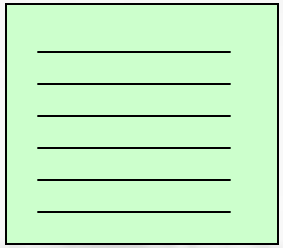


Convert to GIS Rasters for input to ESPAM.exe



Use ESPAM.exe to convert back to Data Tables for READINP.exe

Proposed Modification:

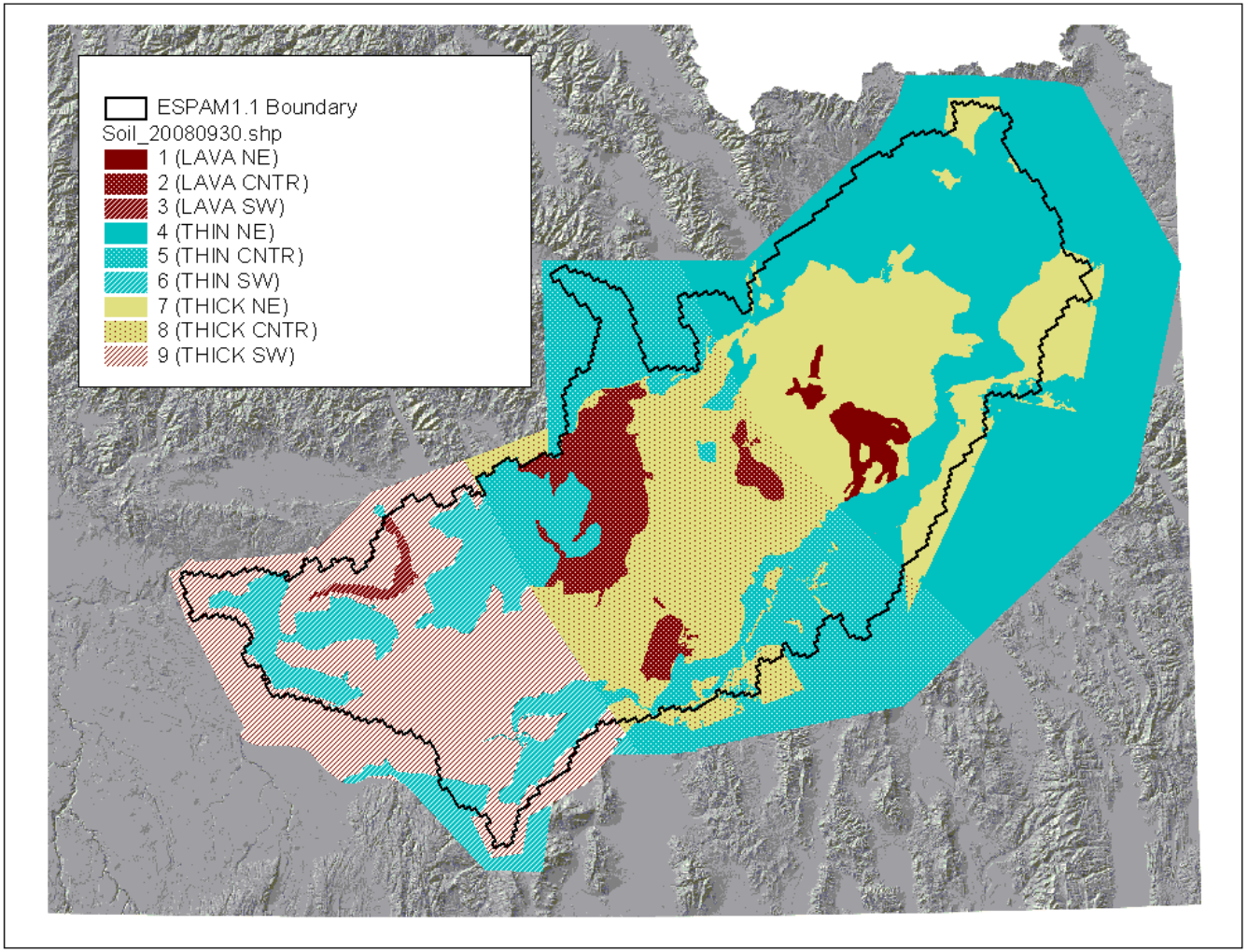


Output calculations
in format required
by READINP.exe
(*.nir format)

Missing Data Proposal

- If an "October" value is missing, use average of all October months with data.

V. Generalized Soils Map



Discussion