Riparian- Flood Plain Model

- Landscape Analysis
  - Model Inputs
- SWAT Modifications
  - REMM Additions
- Current Plans

Landscape Analysis

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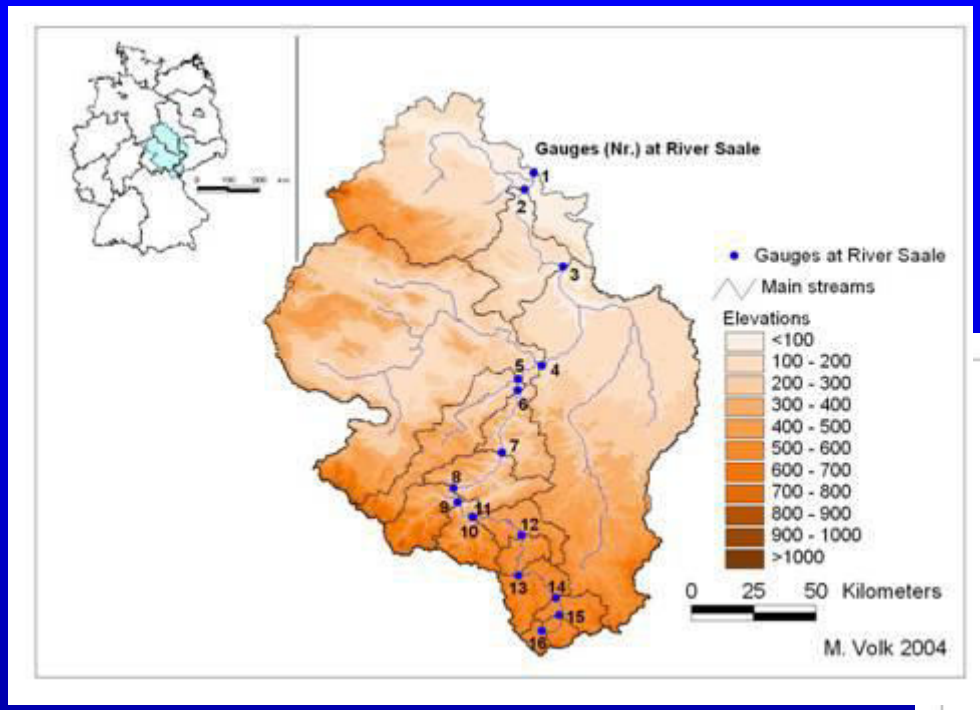
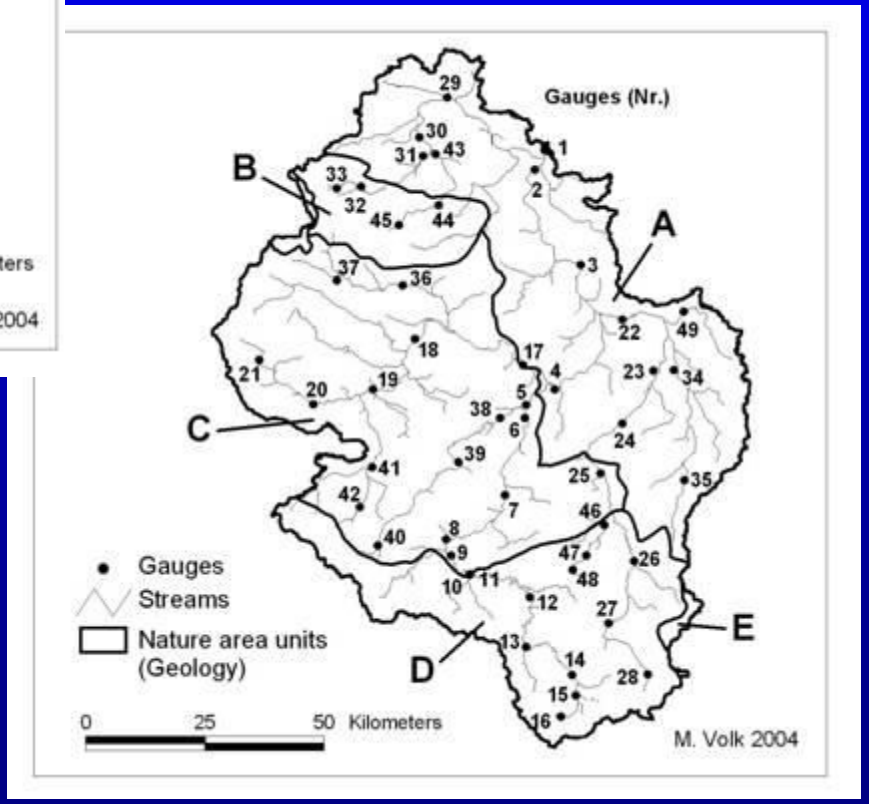
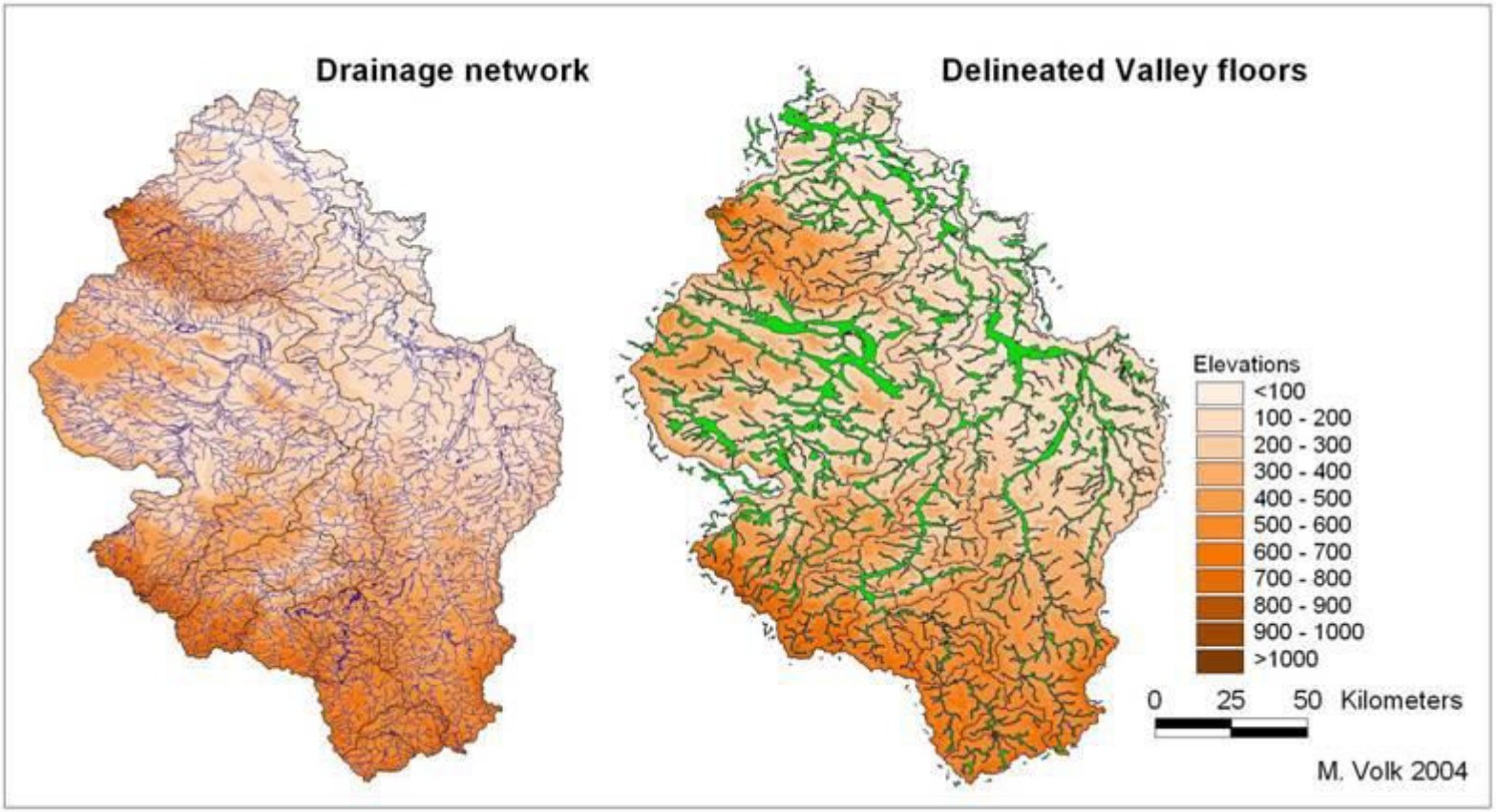
Study Area


Gauges (Nr.) at River Saale
Gauges at River Saale
Main streams
Elevations
<100
100 - 200
200 - 300
300 - 400
400 - 500
500 - 600
600 - 700
700 - 800
800 - 900
900 - 1000
>1000
0 25 50 Kilometers
M. Volk 2004

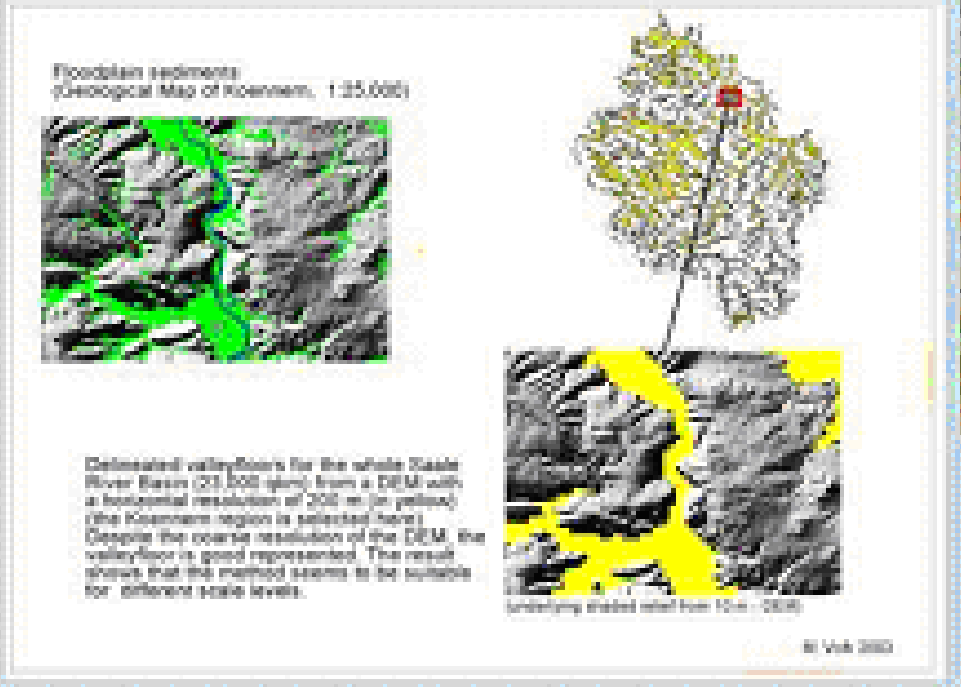

Gauges (Nr.)
A
B
C
D
E
Gauges
Streams
Nature area units (Geology)
0 25 50 Kilometers
M. Volk 2004

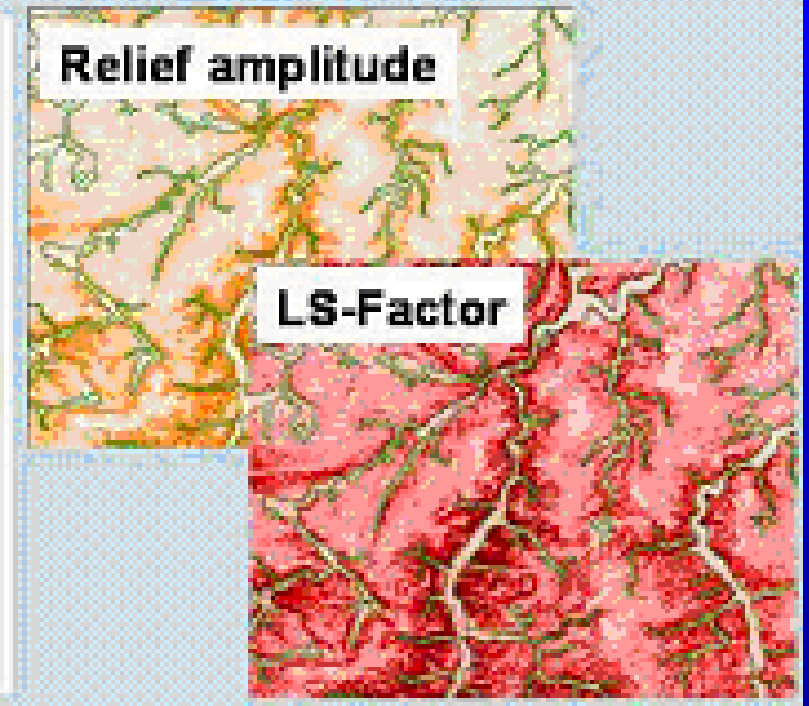
The Saale River Basin (Central Germany) is subdivided in three sub-regions: The Pleistocene lowlands, the loess sub-region and the mountainous sub-region. The length of river is about 320 km. Precipitation varies from 500 mm in the loess areas to 1200 mm in the forested mountain regions.

Delineation of the Landscape Units



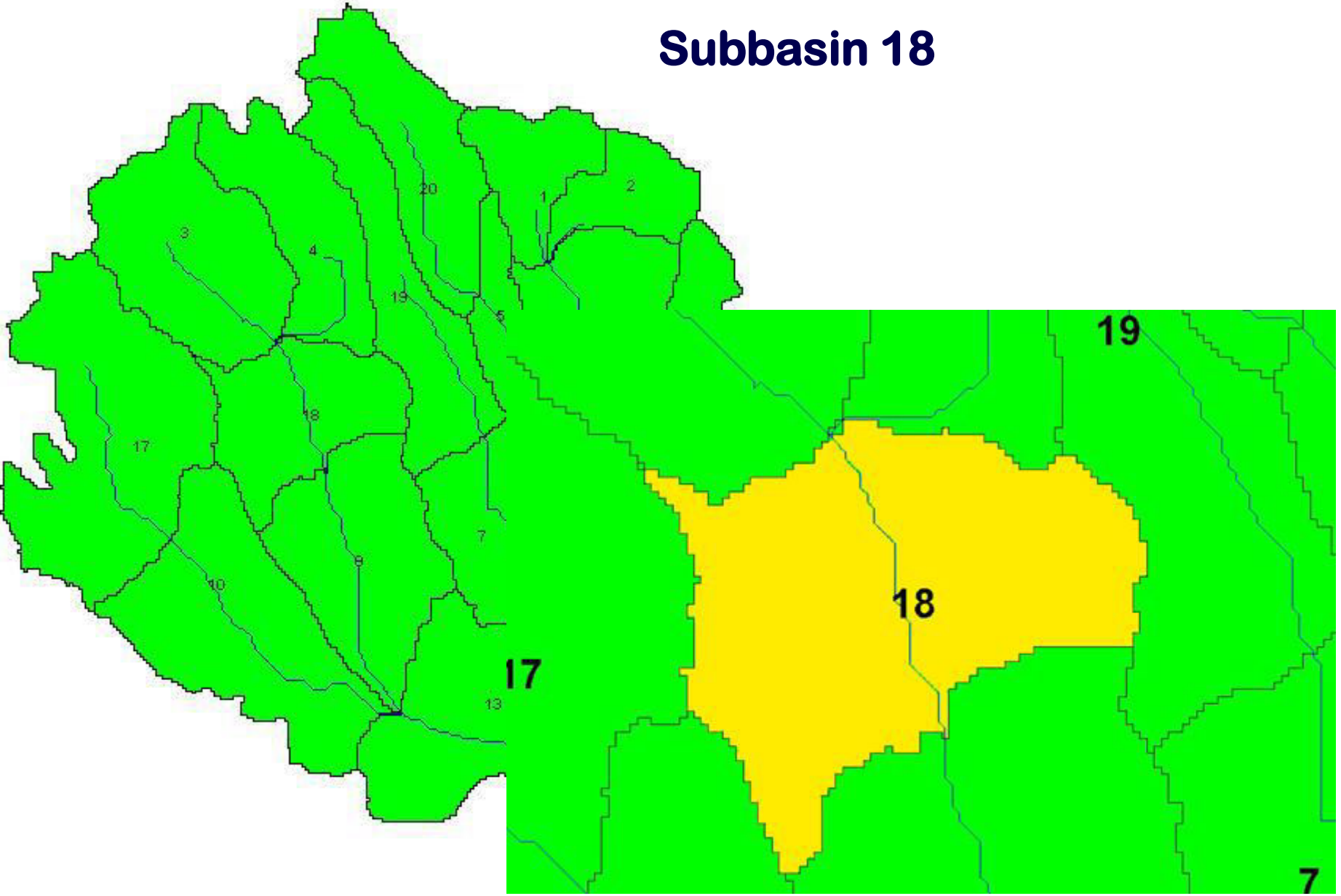
Delineation by using Slope position method





Validation: Soil maps and Morphometric parameters

Subbasin 18



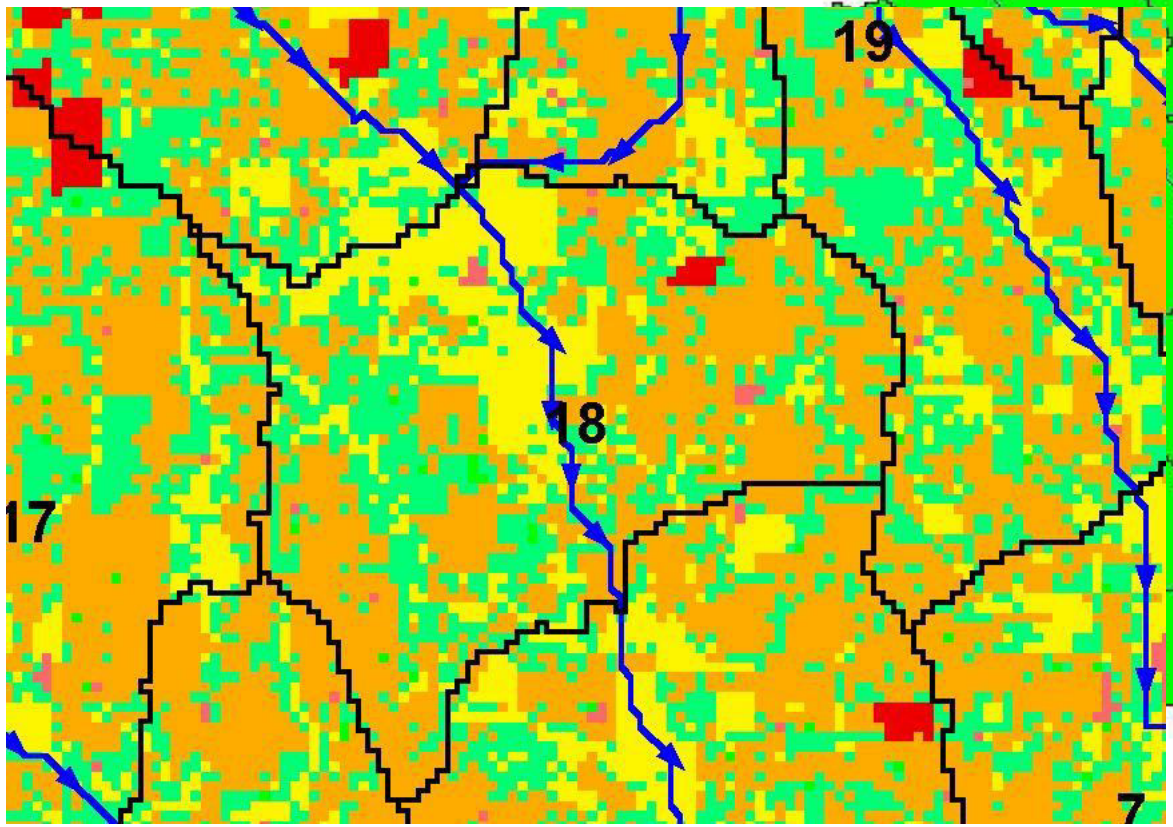
HRU's

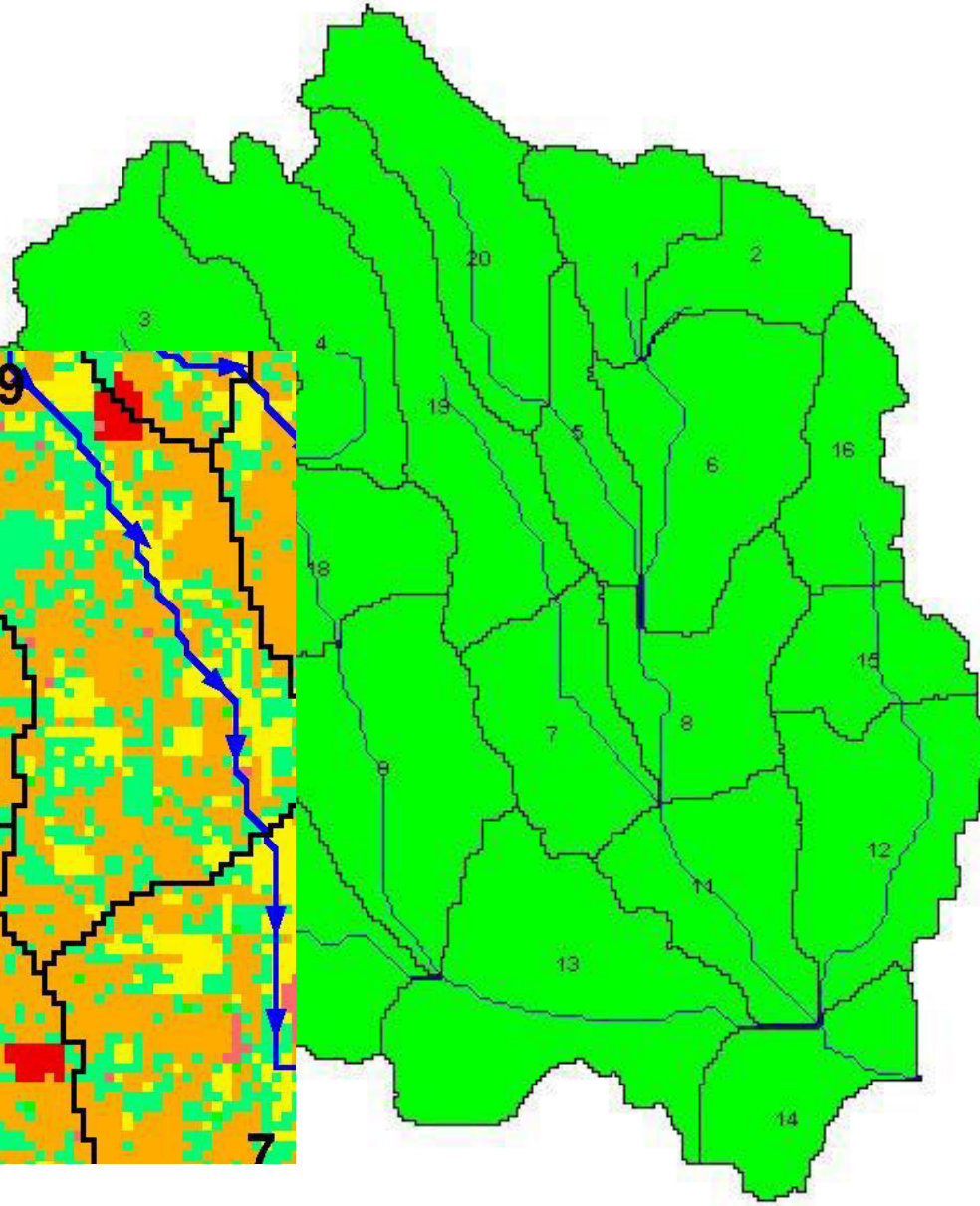
28% Range-Sandy

51% Pasture – Silt

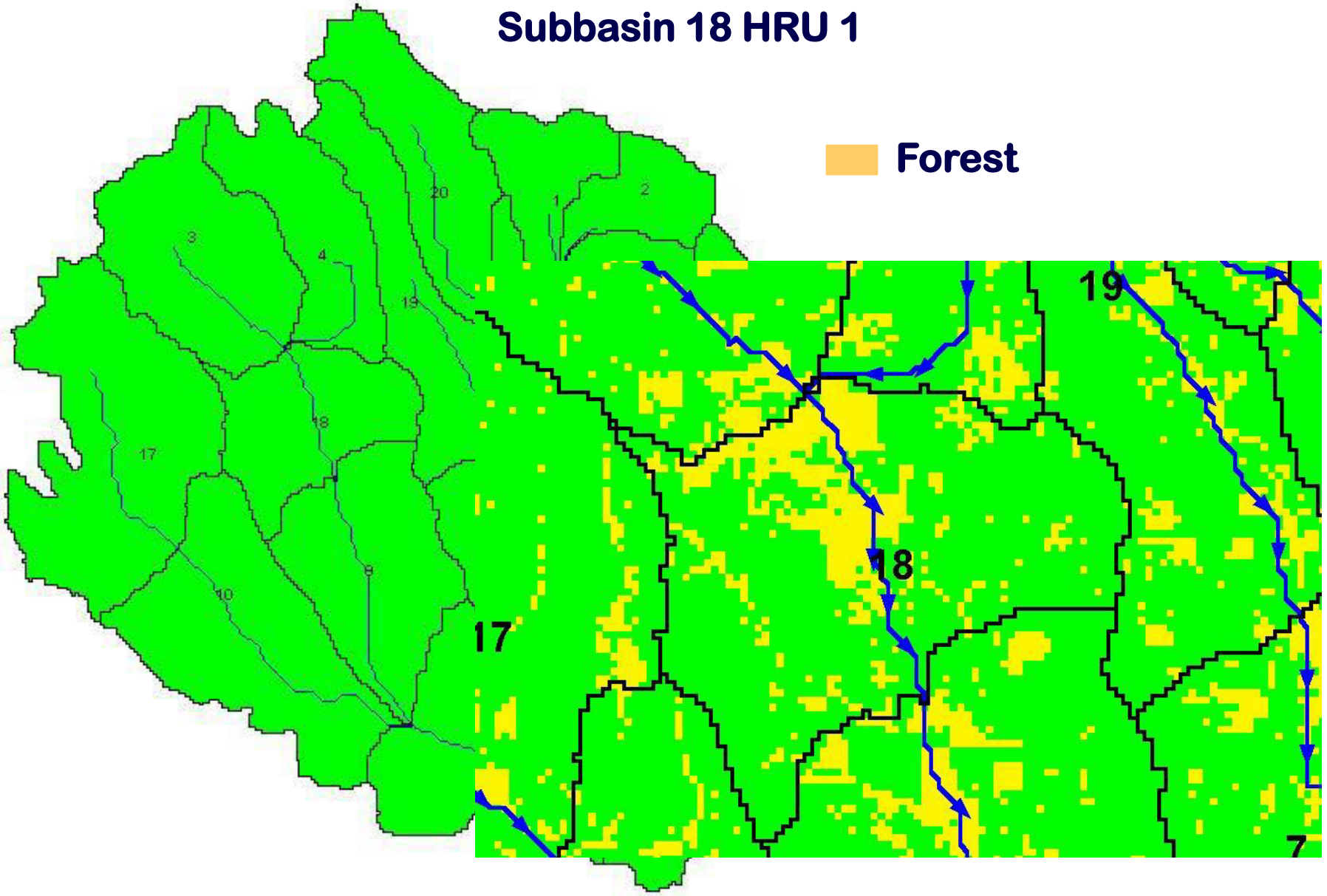
16% Forest – Sandy

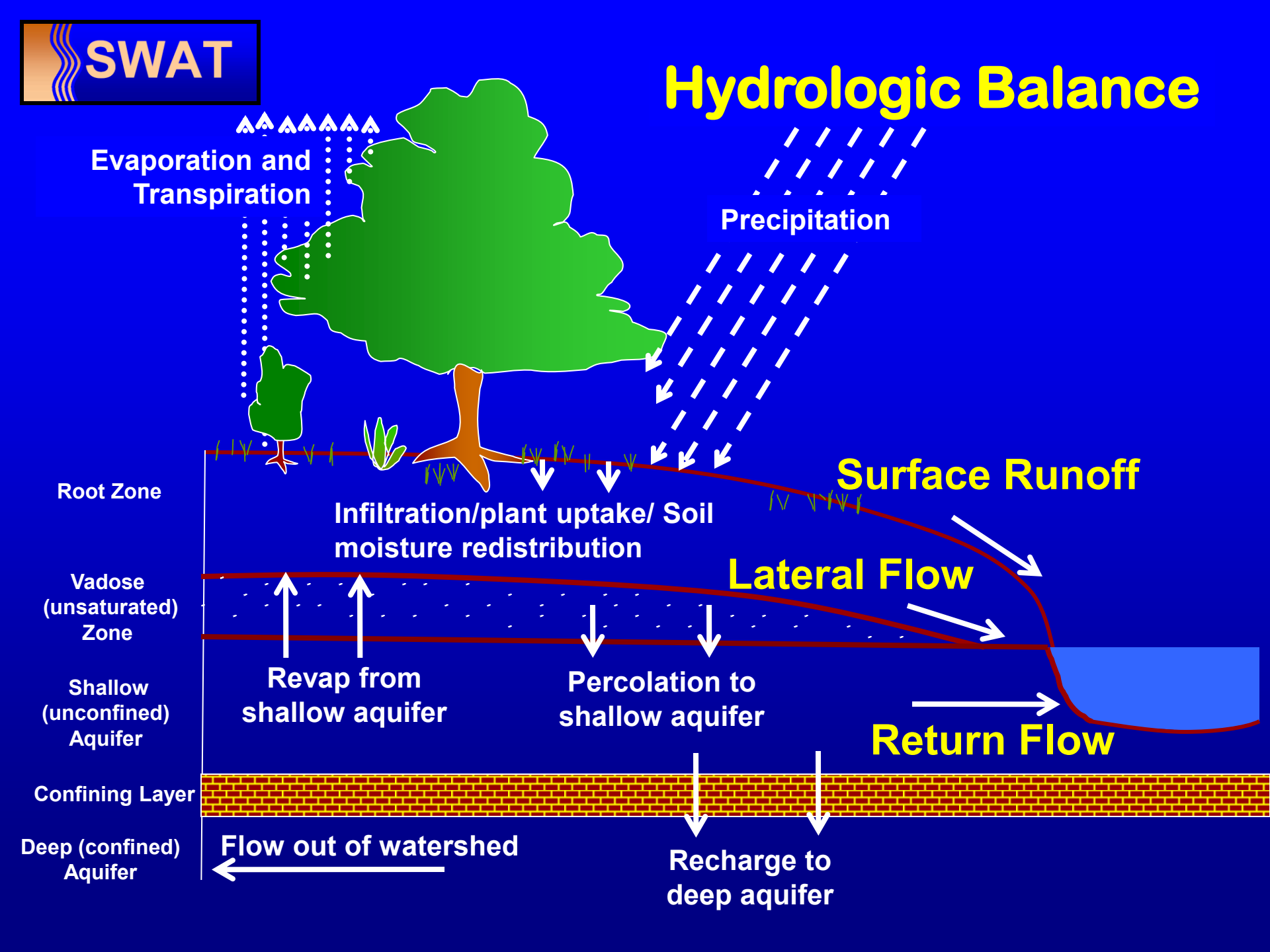
4% - Agriculture - Silt





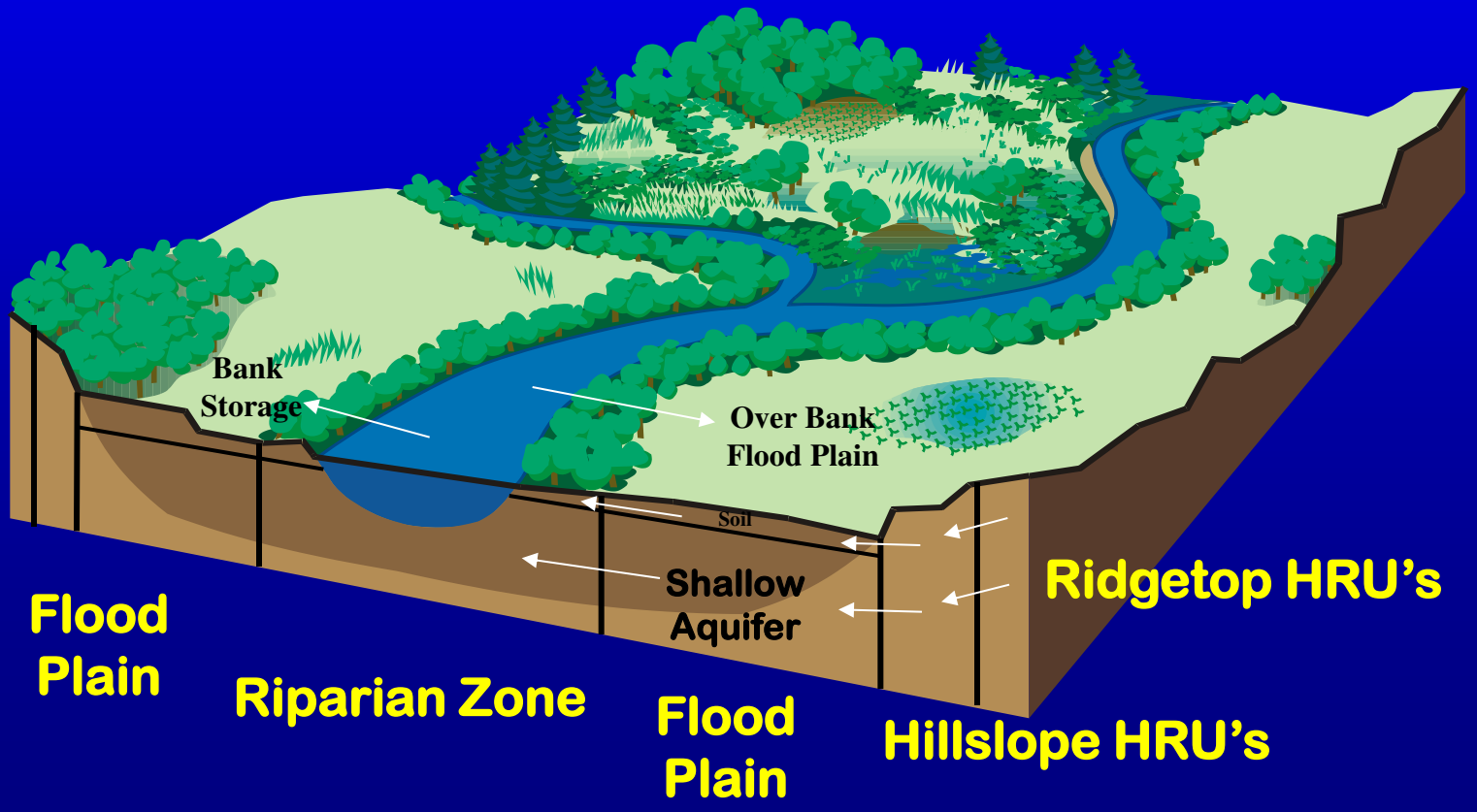
Subbasin 18 HRU 1




SWAT
Hydrologic Balance
Evaporation and Transpiration
Precipitation
Root Zone
Surface Runoff
Infiltration/plant uptake/ Soil moisture redistribution
Vadose (unsaturated) Zone
Lateral Flow
Shallow (unconfined) Aquifer
Revap from shallow aquifer
Percolation to shallow aquifer
Return Flow
Confining Layer
Deep (confined) Aquifer
Flow out of watershed
Recharge to deep aquifer

SWAT 2003 Current Research

- Landscape Positions
  (New HRUs: Valley floors, Hillslopes, Ridgetops)
- Riparian Zones



Current Consortium

- Riesel, Texas
  - Peter Allen – Baylor
  - Daren Harmel
- Tifton, Georgia
  - Richard Lowrance
  - Dave Bosch
- University Park, Pennsylvania
  - Bil Gburek
  - Tammie Veith
- El Reno, Oklahoma
  - Mike Van Liew