

SNOTEL Siting Analysis and Hydrologic Modeling Studies

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SNOTEL Siting Analysis

We (NRCS in collaboration with PSU) have begun to gather together in a systematic format all readily available GIS layers of information about a basin that would assess the representativeness of the existing network with respect to physical basin characteristics and assist in planning locations of possible new data sites.

SNOTEL Siting Analysis

Physical characteristics layers:

- Elevation
- Average monthly precipitation (PRISM)
- Vegetation / land use
- Forest cover and density
- Soils (texture, etc.)

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Derived layers:

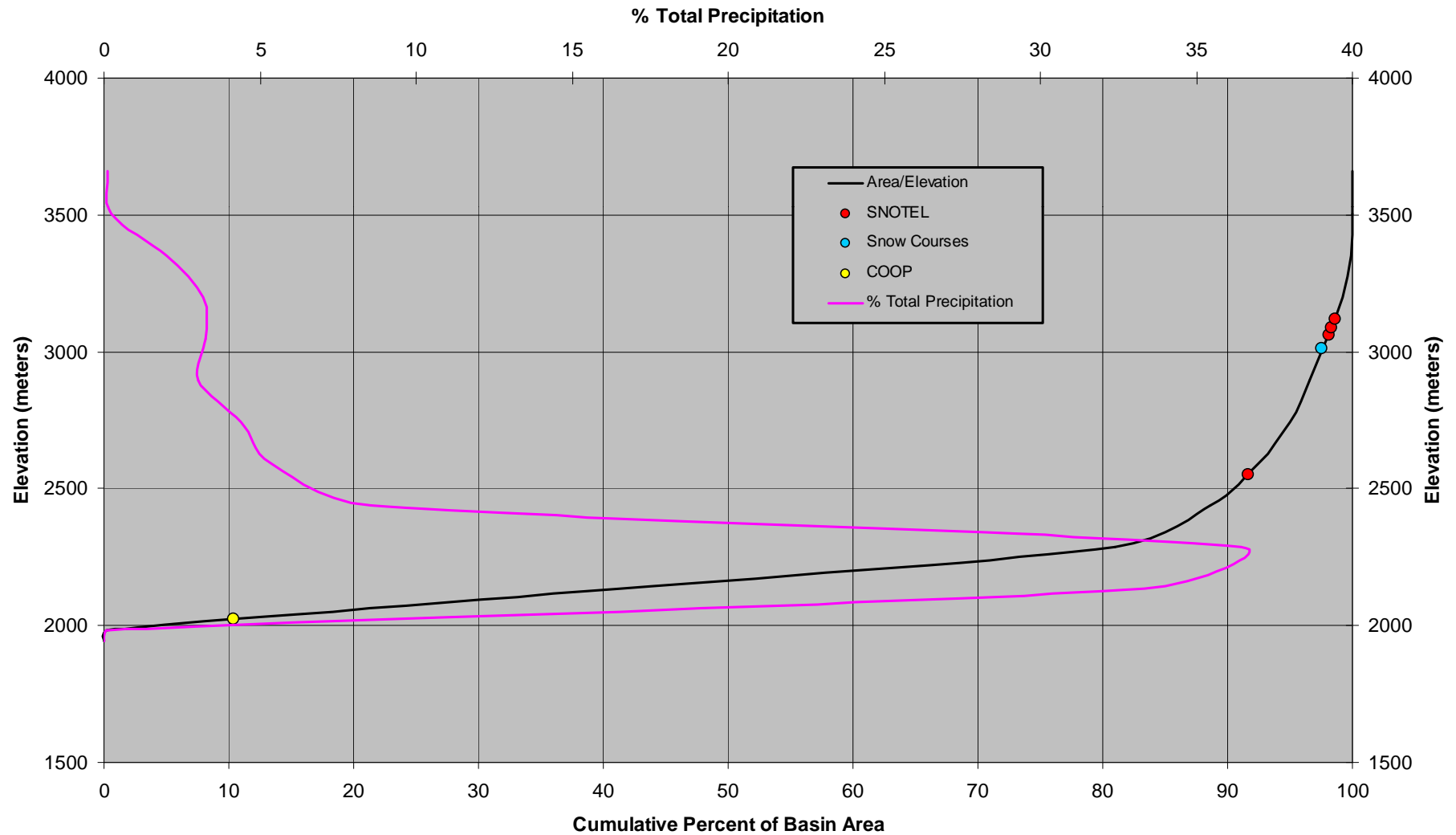
- Slope
- Aspect

Other layers:

- Land ownership
- Roads

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Area-Elevation/Precipitation-Elevation Analysis



Hydrologic Model Parameterization

Second phase of GIS project with PSU will be to develop tools within ArcGIS to delineate spatial units (hydrologic response units) for the PRMS hydrologic model and to use the spatial data layers to calculate model parameters.

Hydrologic Modeling Studies

Agricultural Research Service, Boise

(Danny Marks):

Working with Penn State Integrated Hydrology Model (PIHM), a detailed, spatially distributed, physical process model.

Integrating energy balance snow process model (*isnobal*).

Testing in Reynolds Creek and Boise River basin.

Hydrologic Modeling Studies

Portland State University (Hamid Moradkhani):

- Methods for probabilistic forecast verification
- Ensemble streamflow prediction (ESP) debiasing and variance adjustment techniques
- Incorporation of seasonal climate forecasts
- Snow data assimilation
- General modeling topics (calibration, HRU delineation, forcing data preparation)