

Cornell University

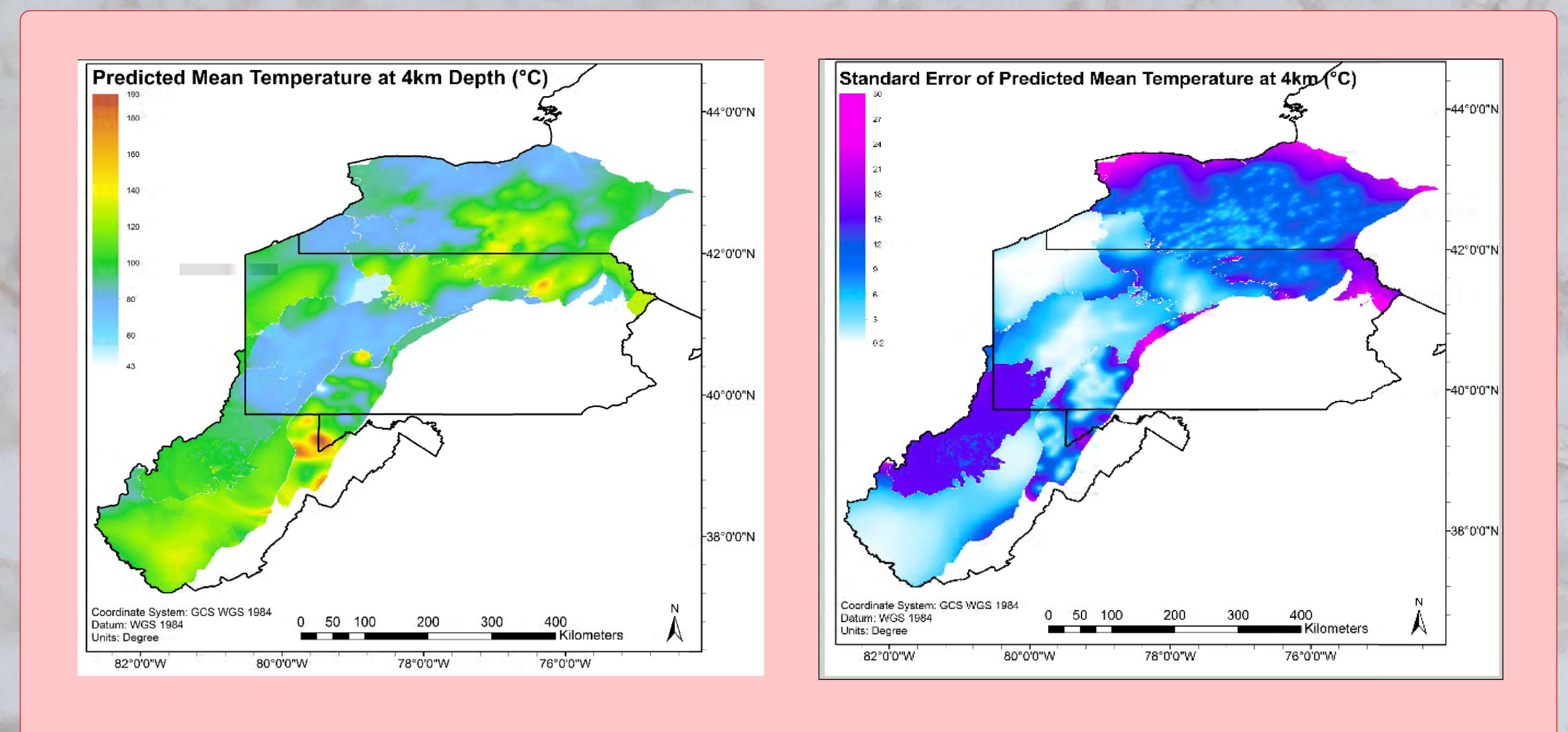
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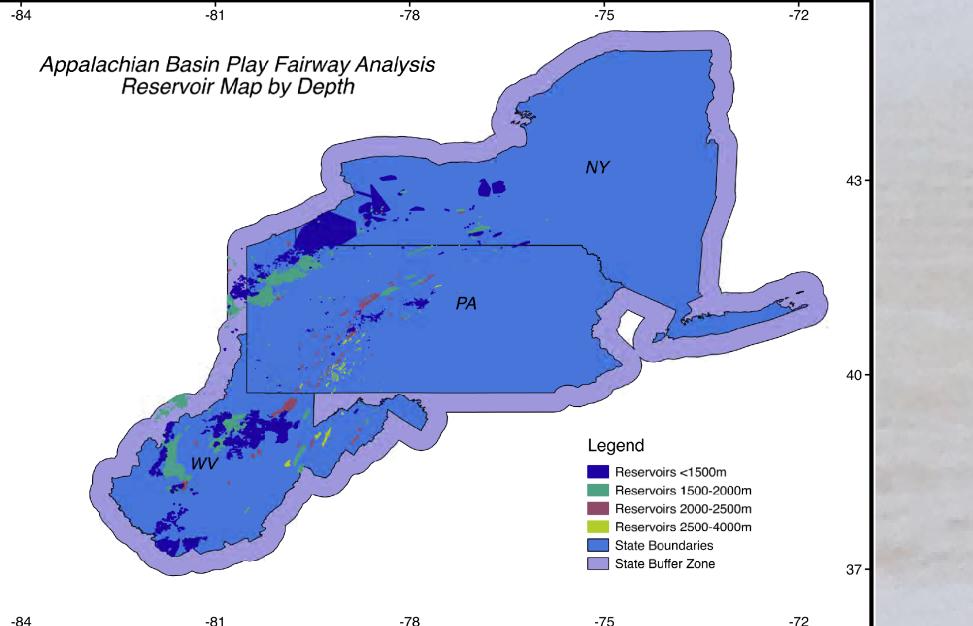
Thermal Resource Analyses Use Simplified Geology Models



- 1) Unify across region the analyses and the computation of standard error Done: Quantify the validity of maps using cross validation to thermal calculations derived from well-specific geology
 - 3) Identify counties in which resource is of best quality

Potential Natural Reservoirs

Build from knowledge derived from exploration and operation of oil & gas fields, and from assessments of gas and brine storage and carbon sequestration capacities



Done:

1) Identify potential reservoirs in temperature appropriate depth zones

2) Rank categories of reservoirs based on productivity index

Low-Temperature Geothermal Play Fairway Analysis for the Appalachian Basin

Project Team

West Virginia University Brian Anderson (PI) Xiaoning He Kelydra Welcker

EERE, US DOE New York State Geological Survey Geologic Survey

Pennsylvania Bureau of Topographic & West Virginia Geological & Economic Survey

Thermal Resource

Validate and update existing maps; Improve prediction quality

Natural Reservoirs

Map high porosity/ permeability reservoirs at suitable depths

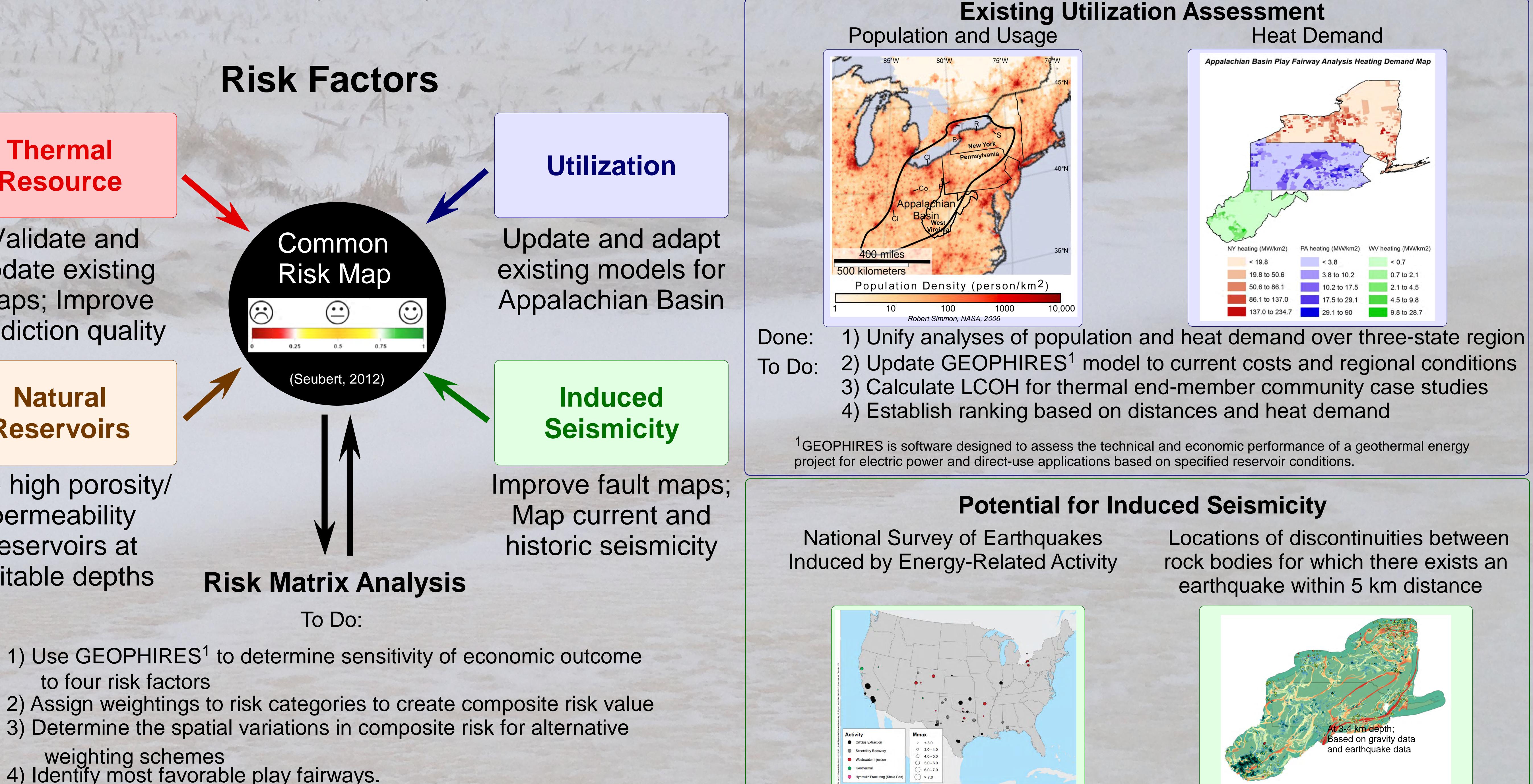
- to four risk factors

weighting schemes 4) Identify most favorable play fairways.



Collaborators

To quantify the risk for low-temperature geothermal exploration in the Appalachian Basin within New York, Pennsylvania, and West Virginia, then to identify areas of minimum risk for direct use applications



Done:

U.S. DEPARTMENT OF ENERGY Renewable Energy

Project Goal

Locations of discontinuities between rock bodies for which there exists an earthquake within 5 km distance

from National Academy of Sciences (2013) 1) Map discontinutities across region with potential field methods 2) Track natural microseismicity with Earthscope Transportable Array 3) Map distance to nearest fault and assign risk to locations