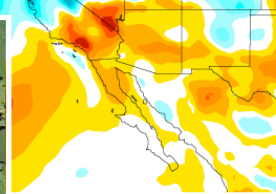
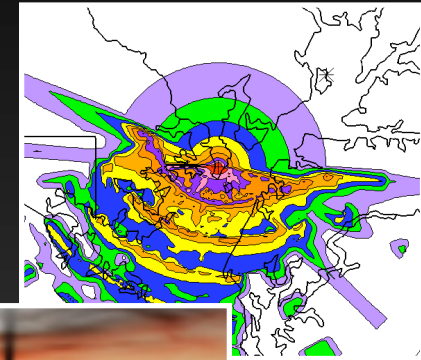
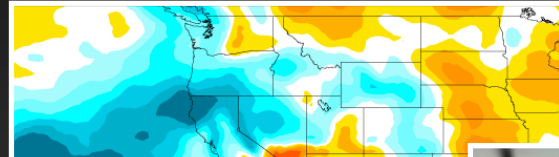
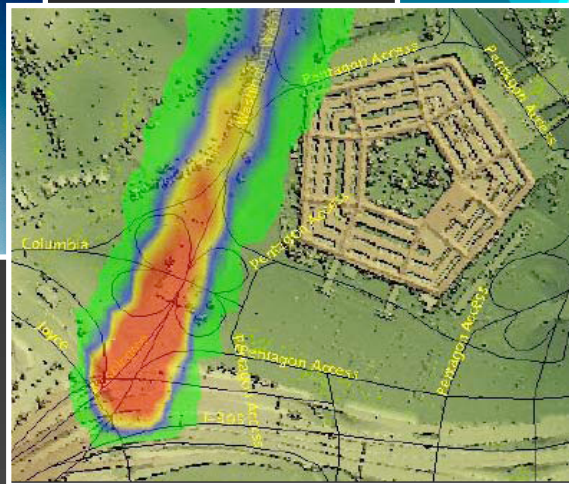


Something in the Air: Weather, Climate, and National Security

NCAR



Jason Knievel

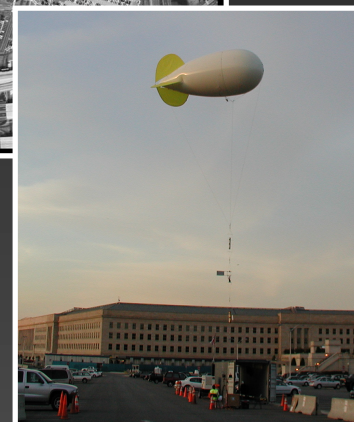
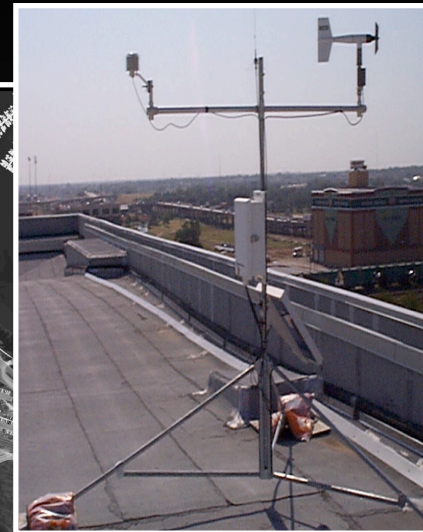
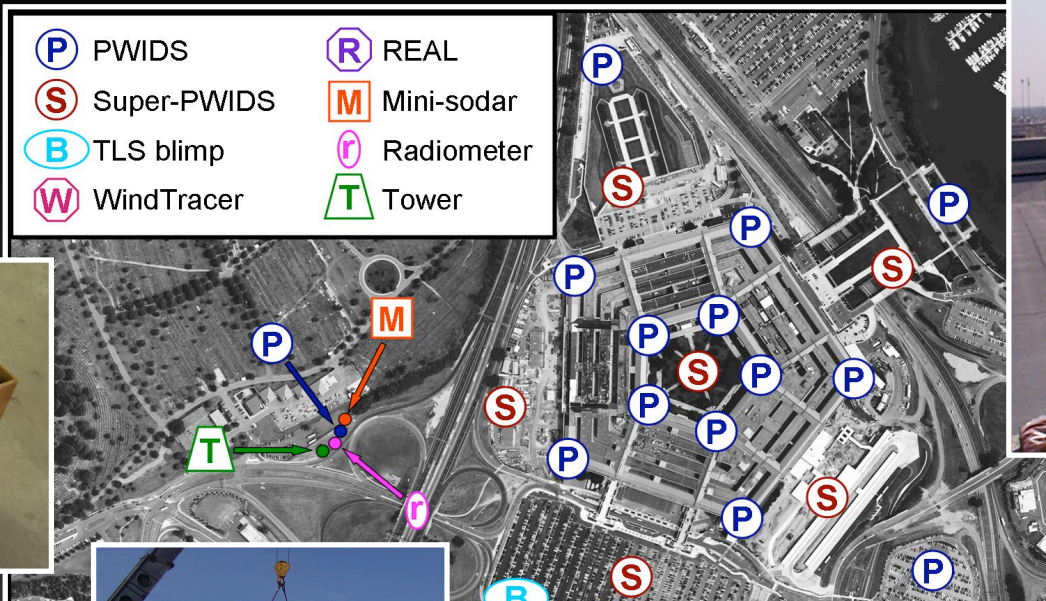
Project Scientist

Research Applications Laboratory

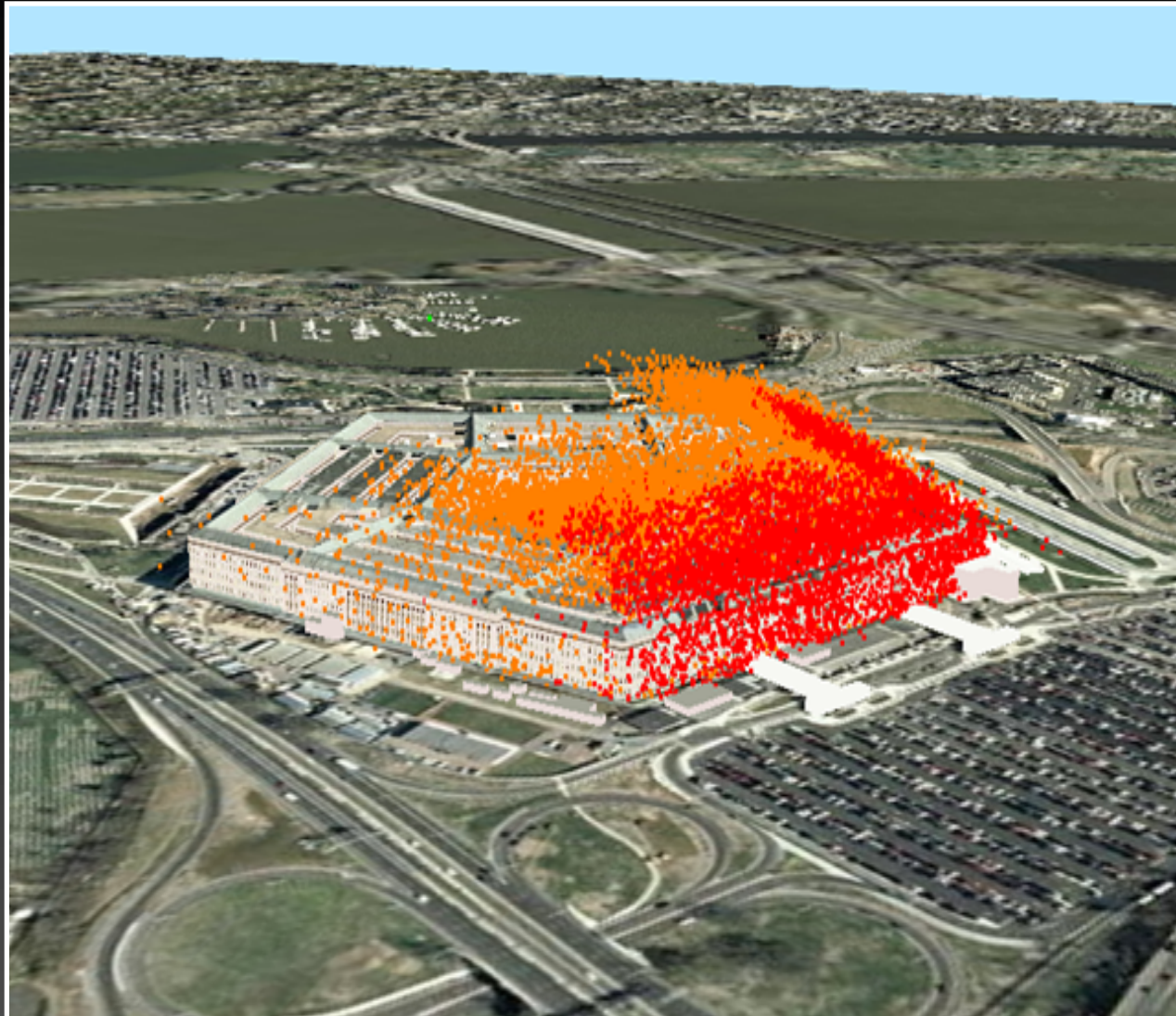
Protecting the Pentagon



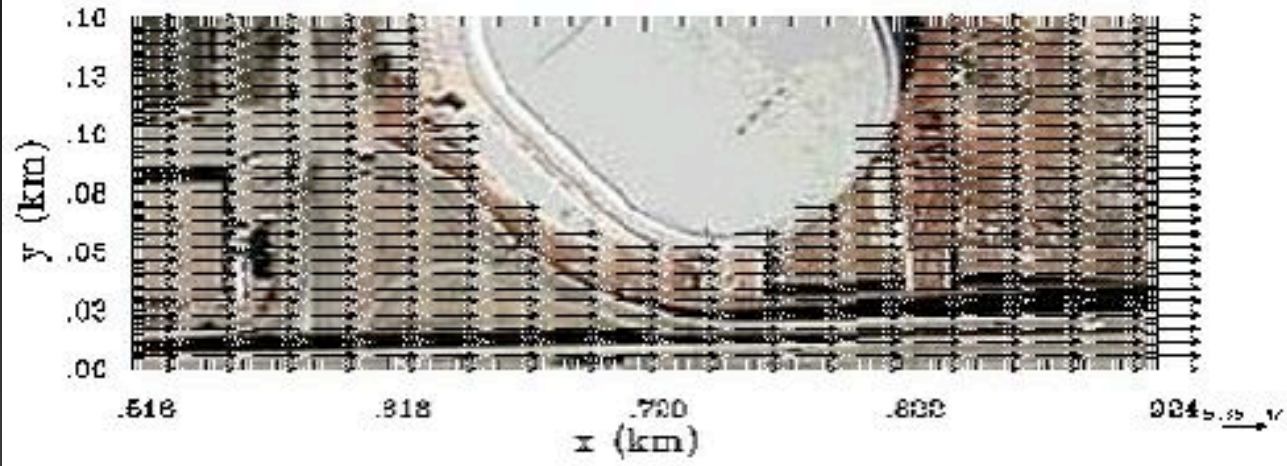
Protecting the Pentagon

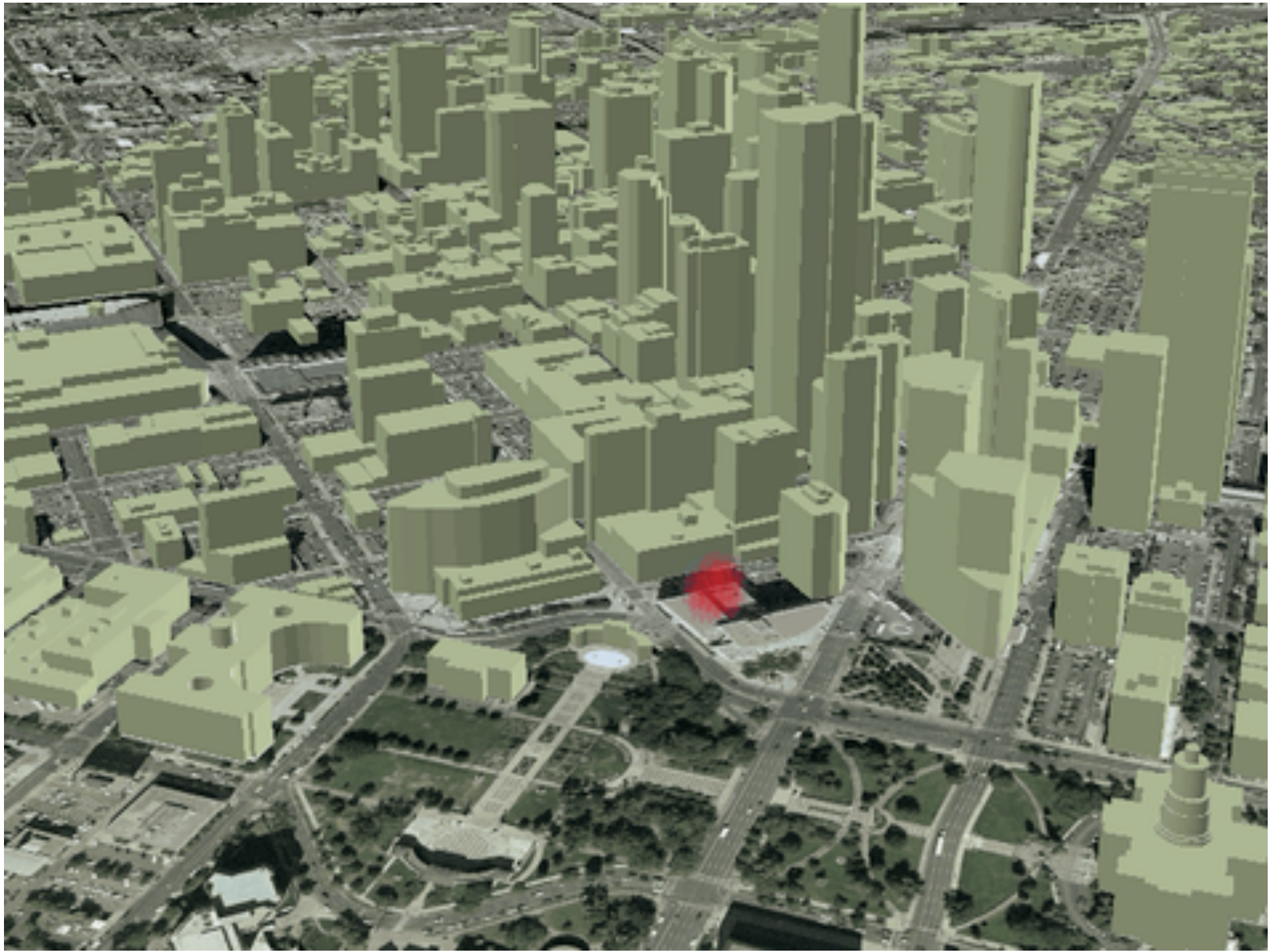


Protecting the Pentagon



chemical C at time= .00 k= 2 z= 6.00





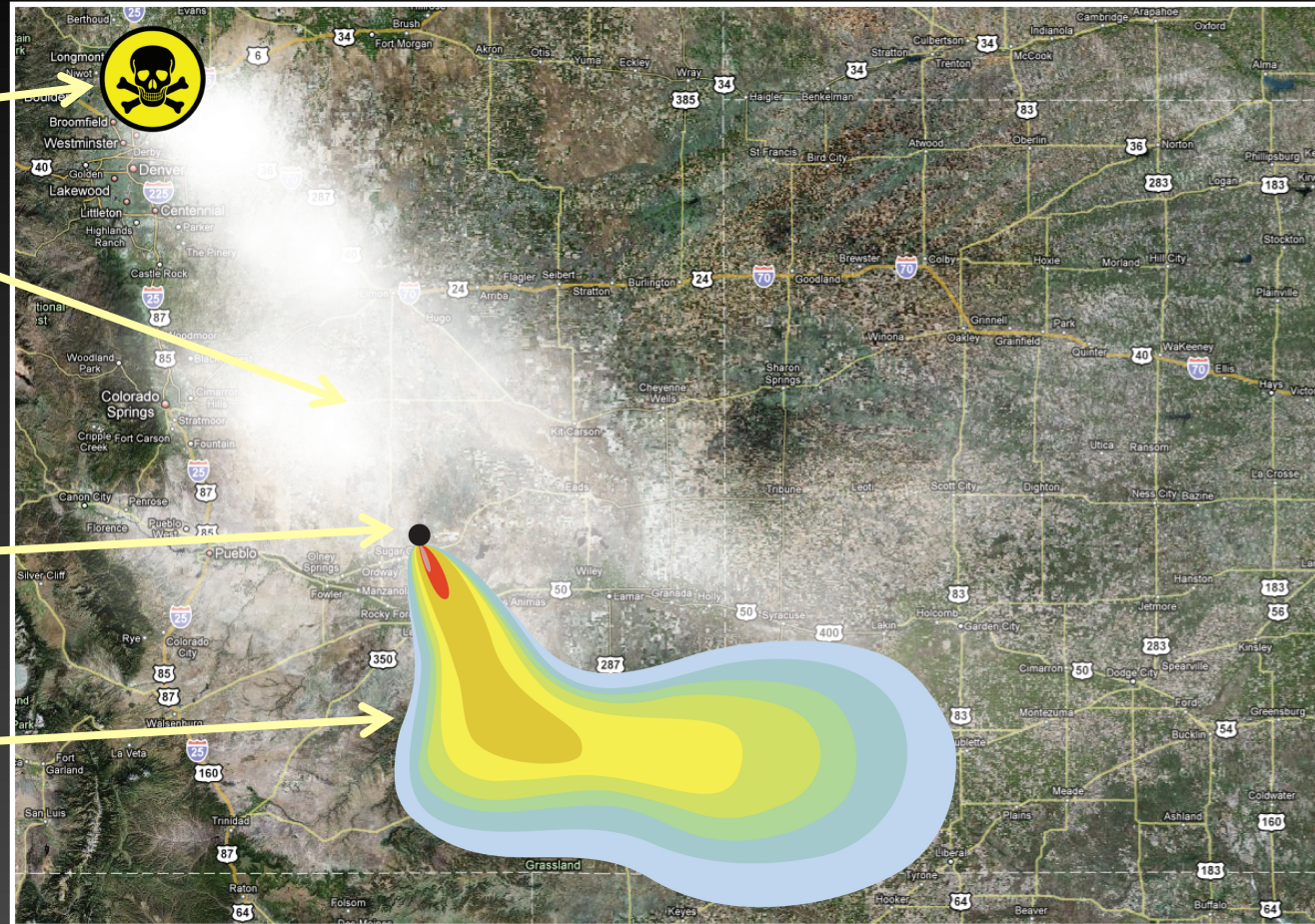
Finding the source of a plume

Actual source

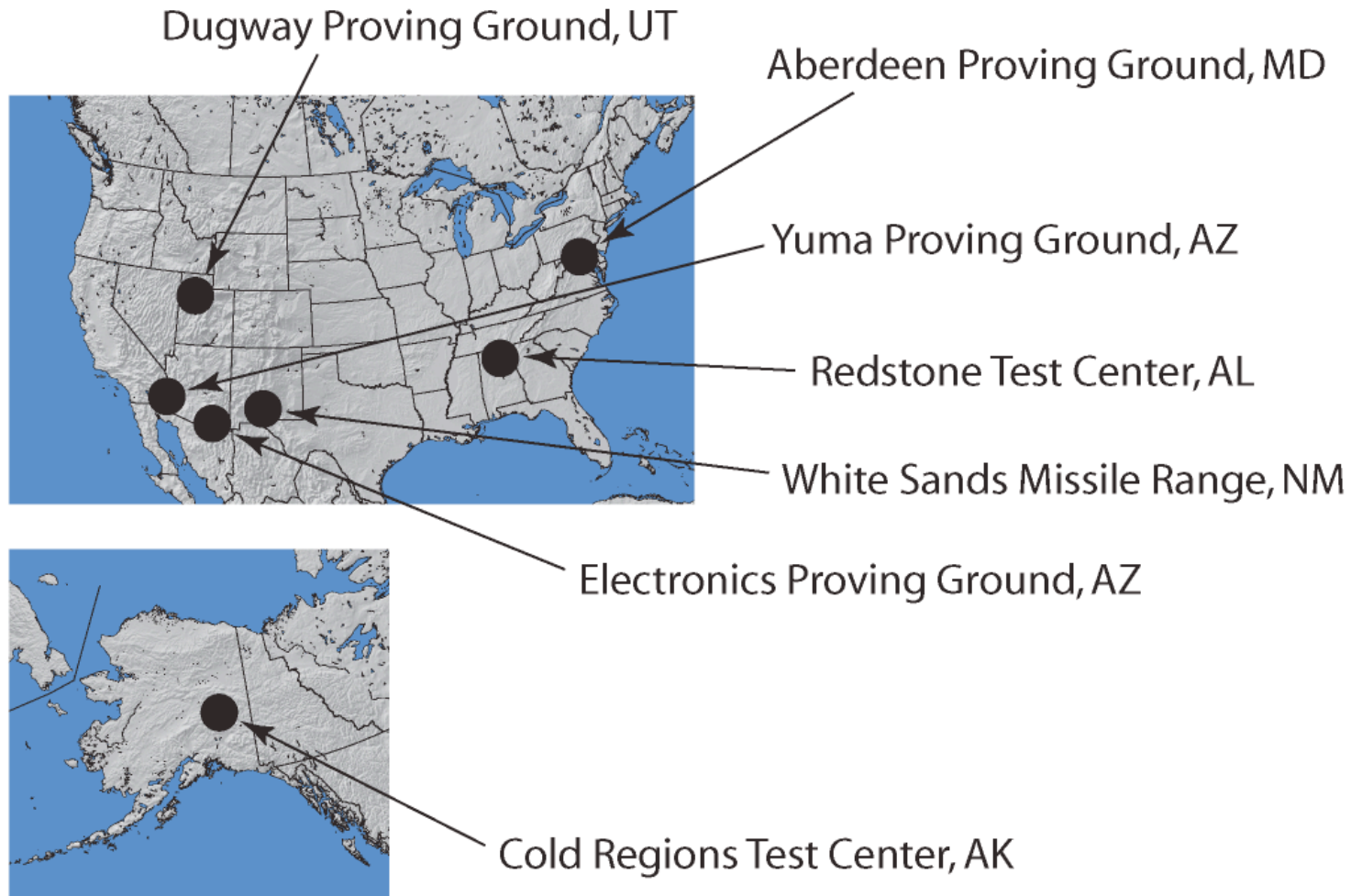
Actual plume

Sensor

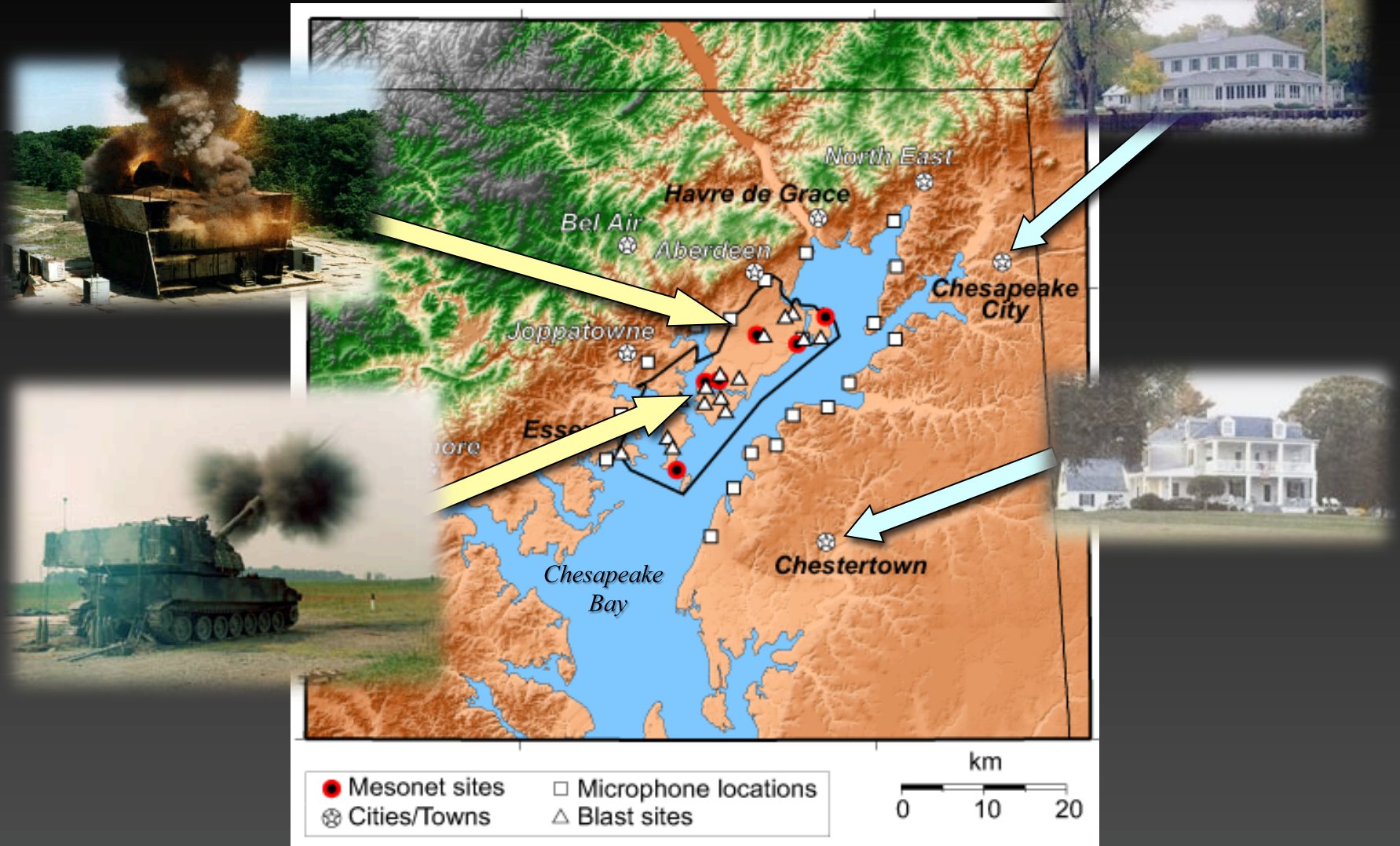
Sensor-based plume



Army test ranges

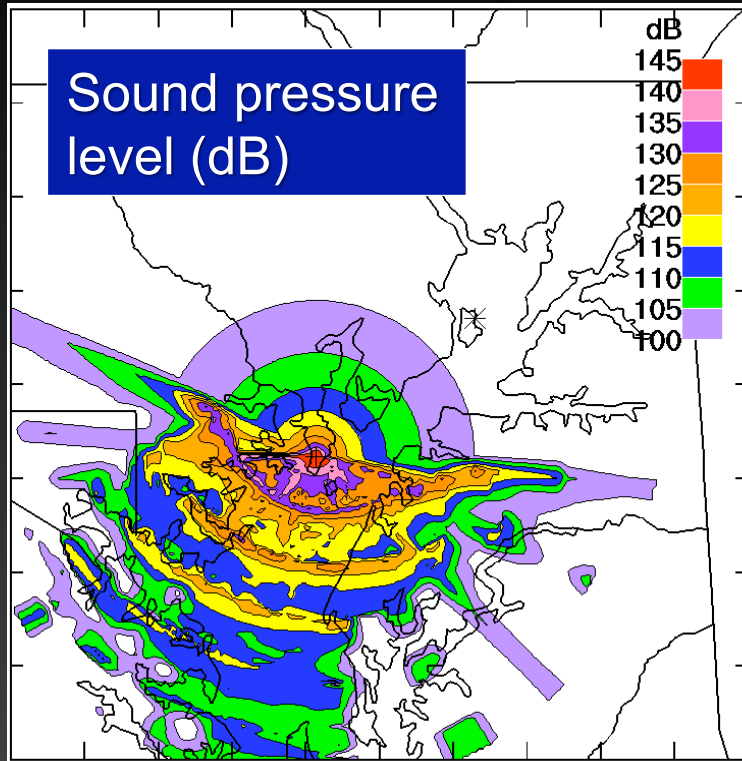


Aberdeen Proving Ground: modeling sound

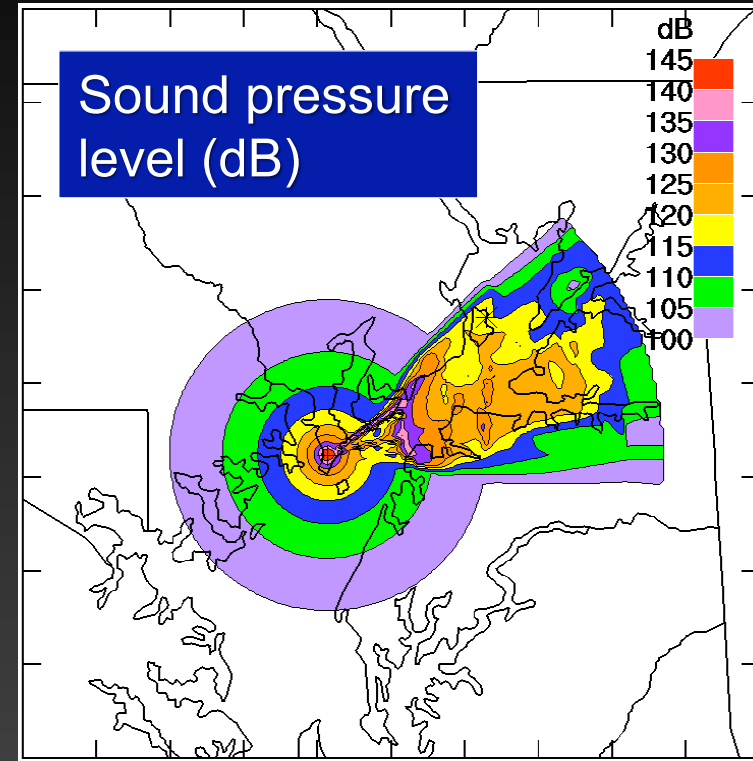


Aberdeen Proving Ground: modeling sound

7:00 a.m. 22 Aug 2001

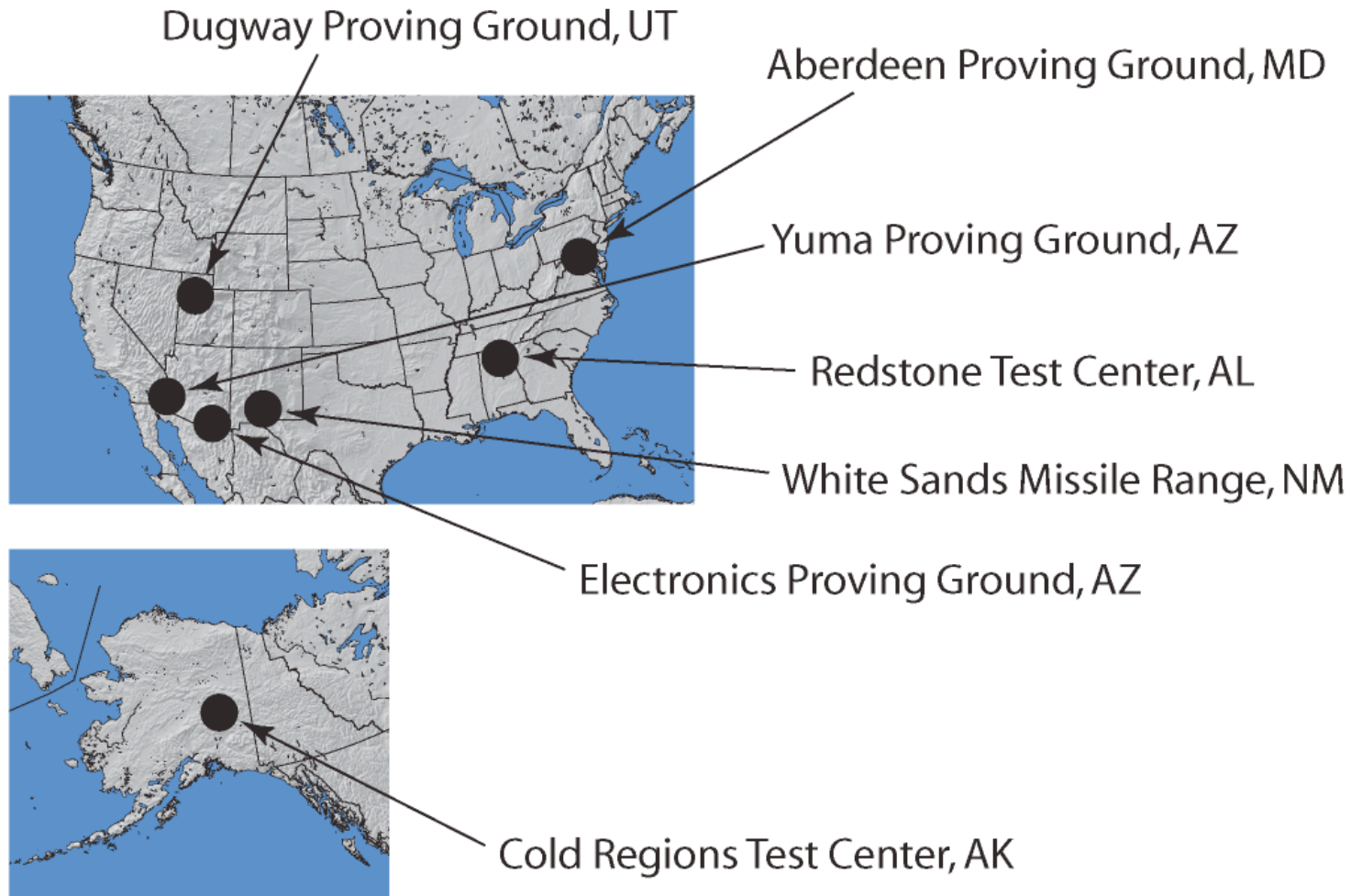


4:00 p.m. 22 Aug 2001

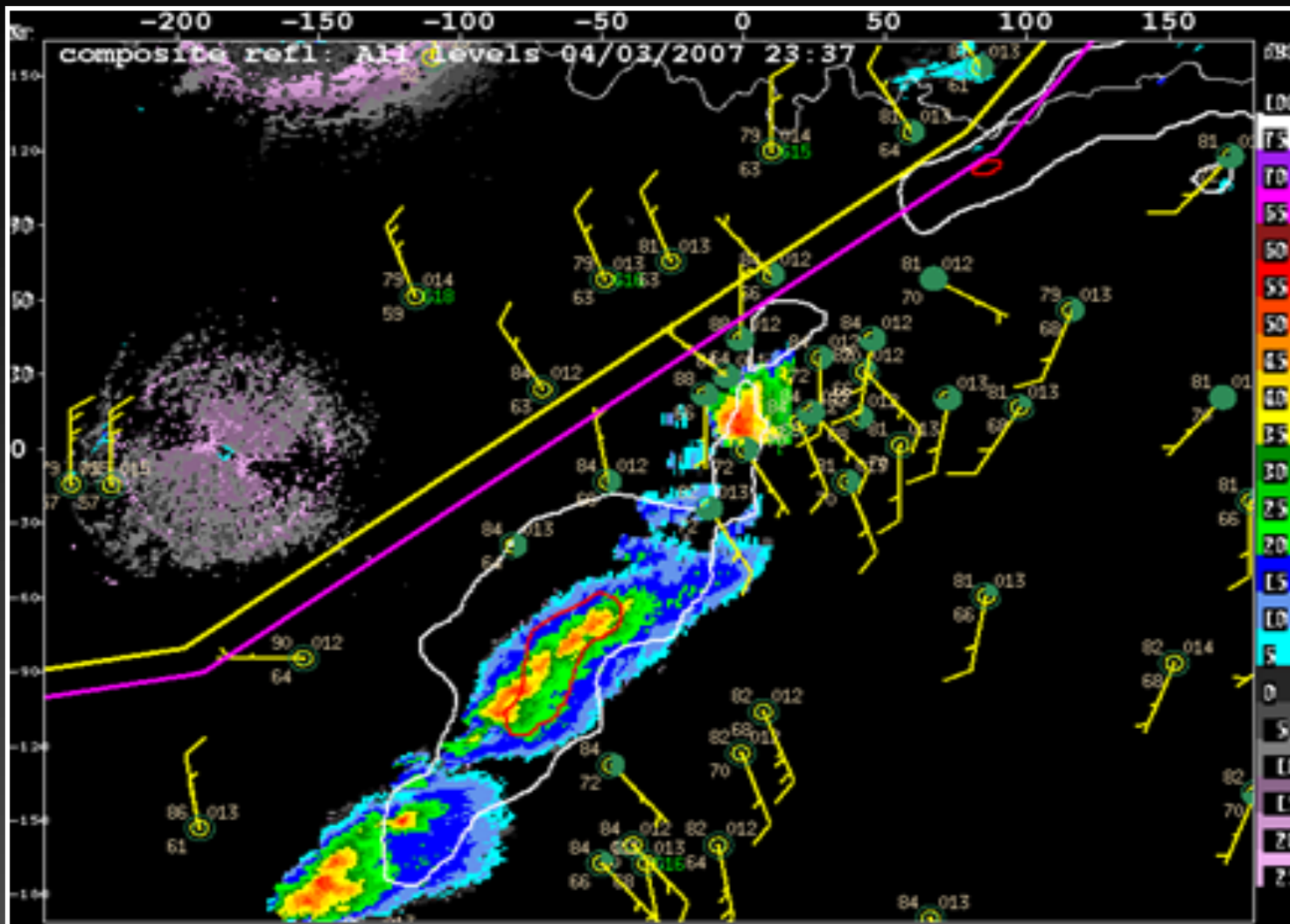


Why the change? A warm and breezy afternoon.

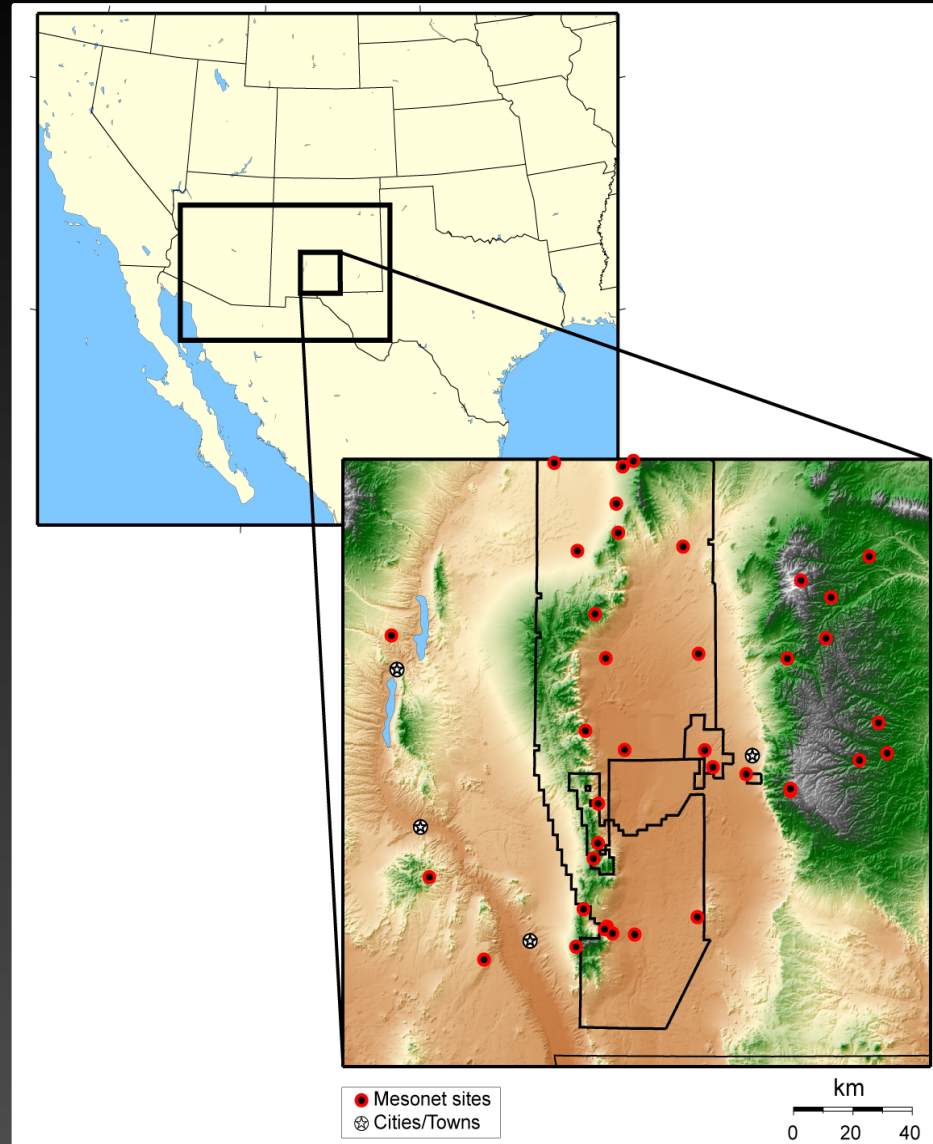
Army test ranges



Predicting storms *minutes* in advance



White Sands Missile Range



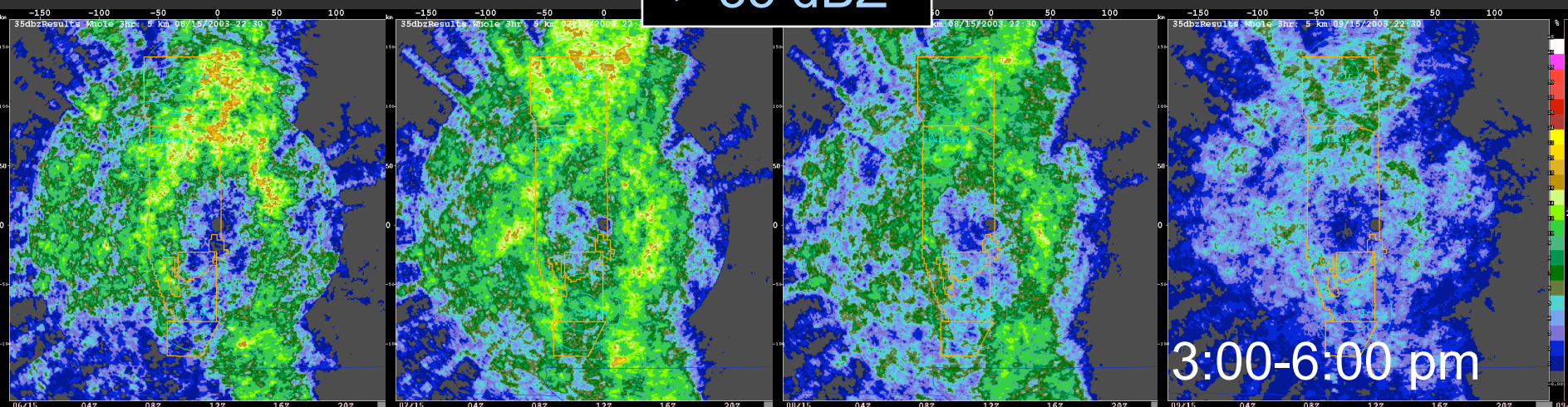
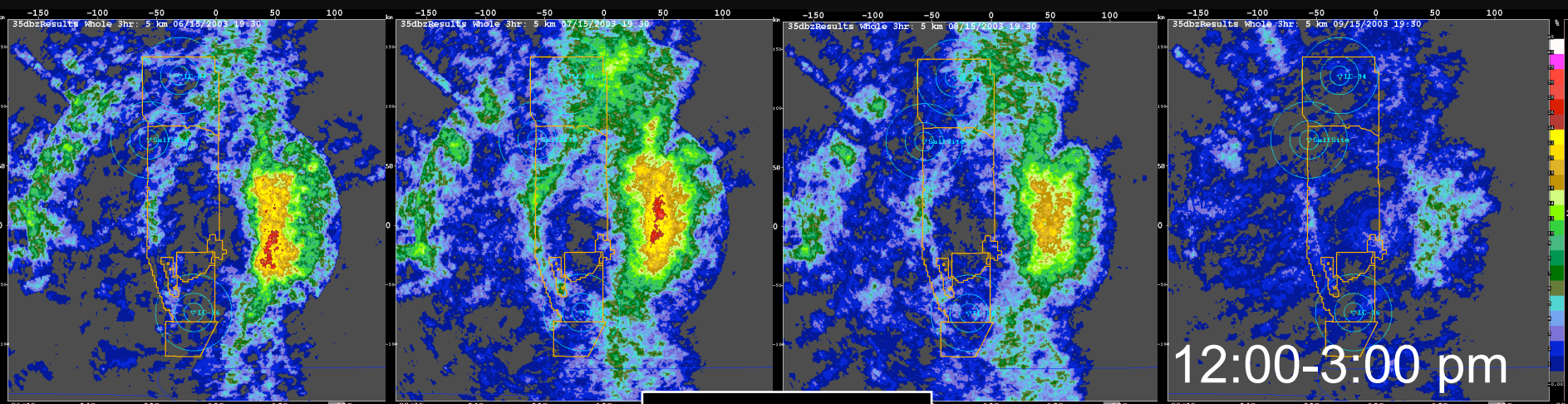
Predicting storms *months* in advance

June

July

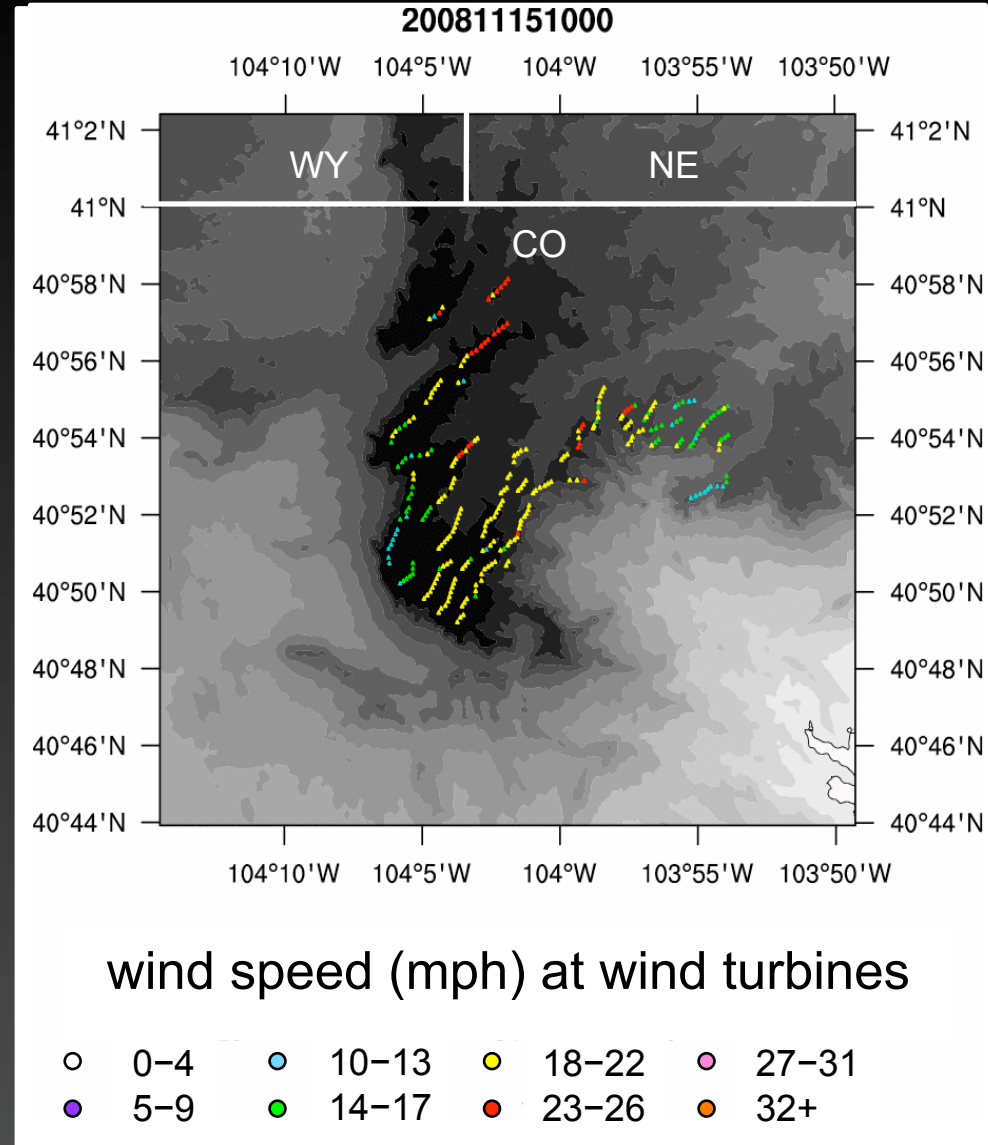
August

September

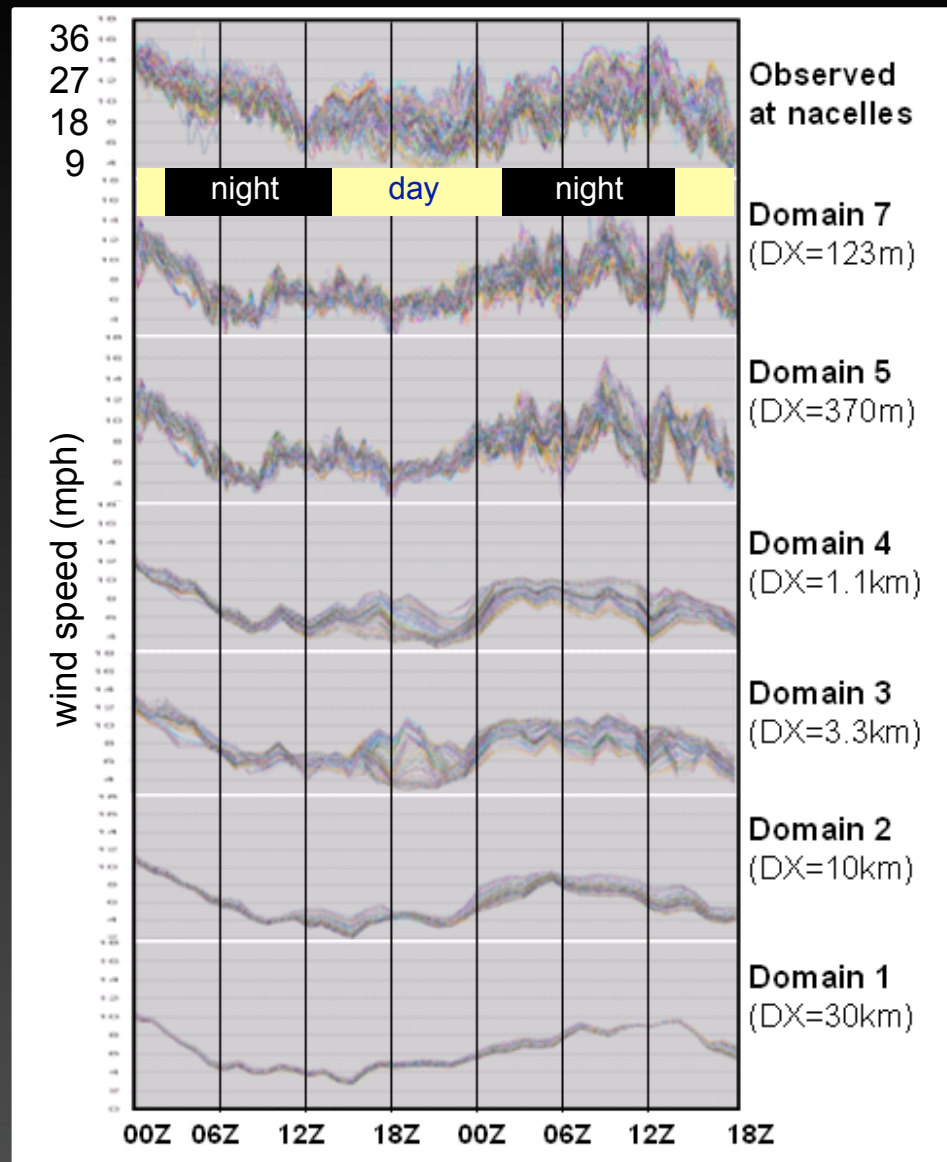


Increasing energy independence: wind power

Xcel Energy's Cedar Creek Wind Farm



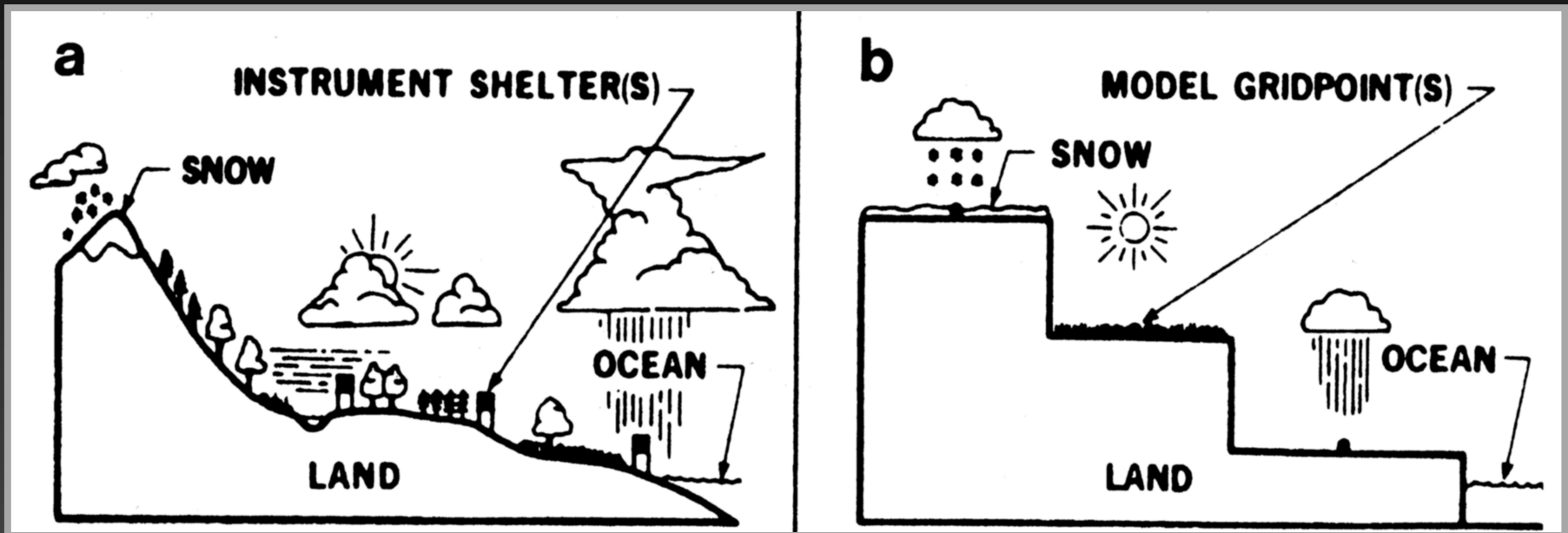
Increasing energy independence: wind power



Nature vs. models

Nature

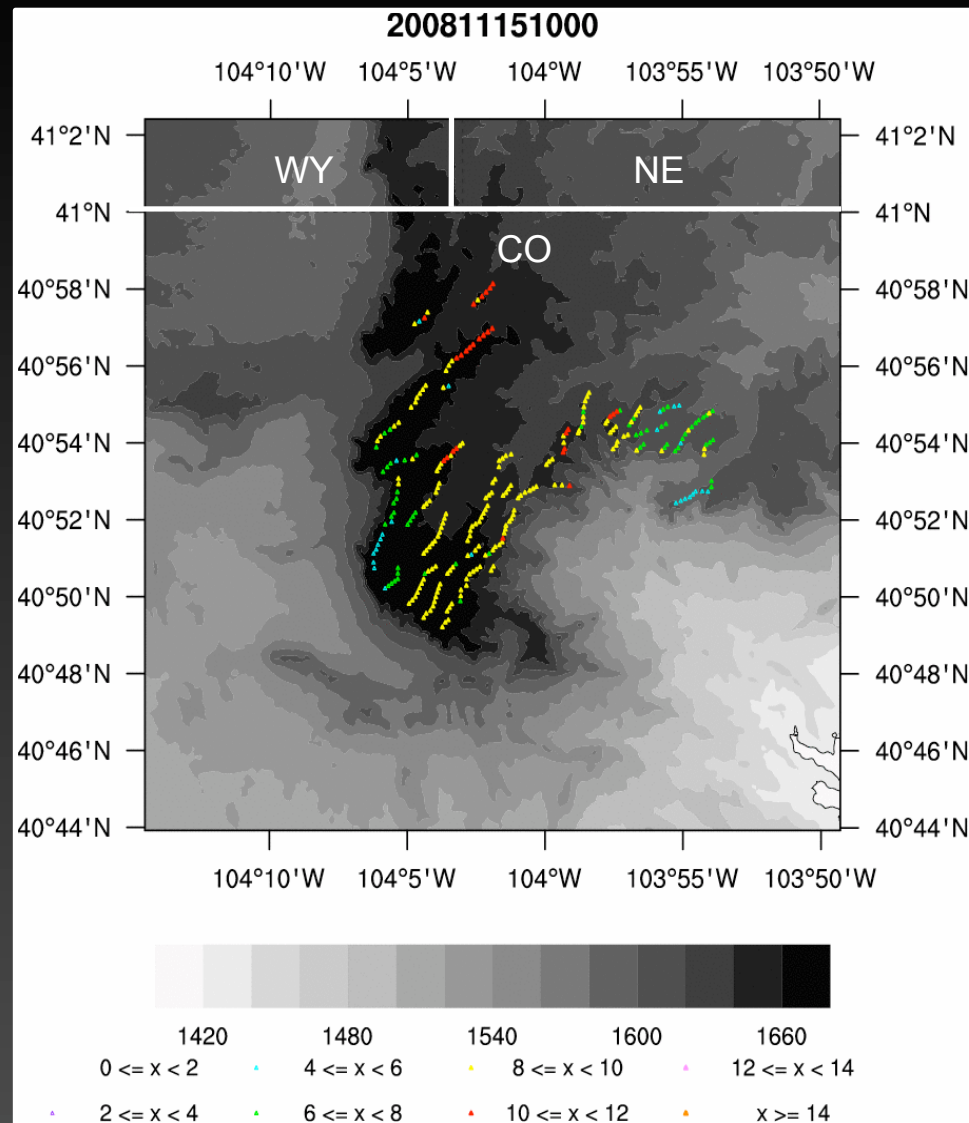
Model



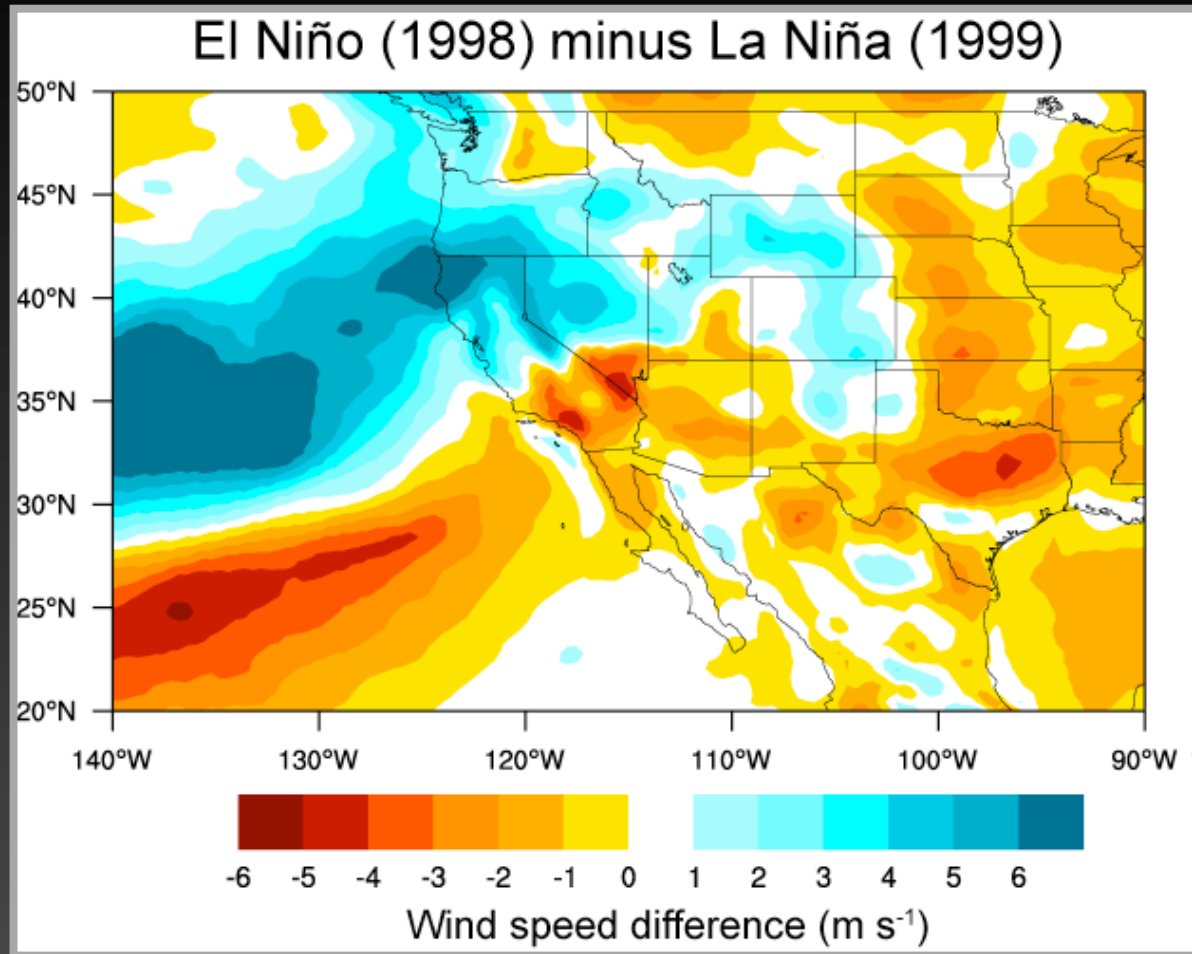
Look familiar?



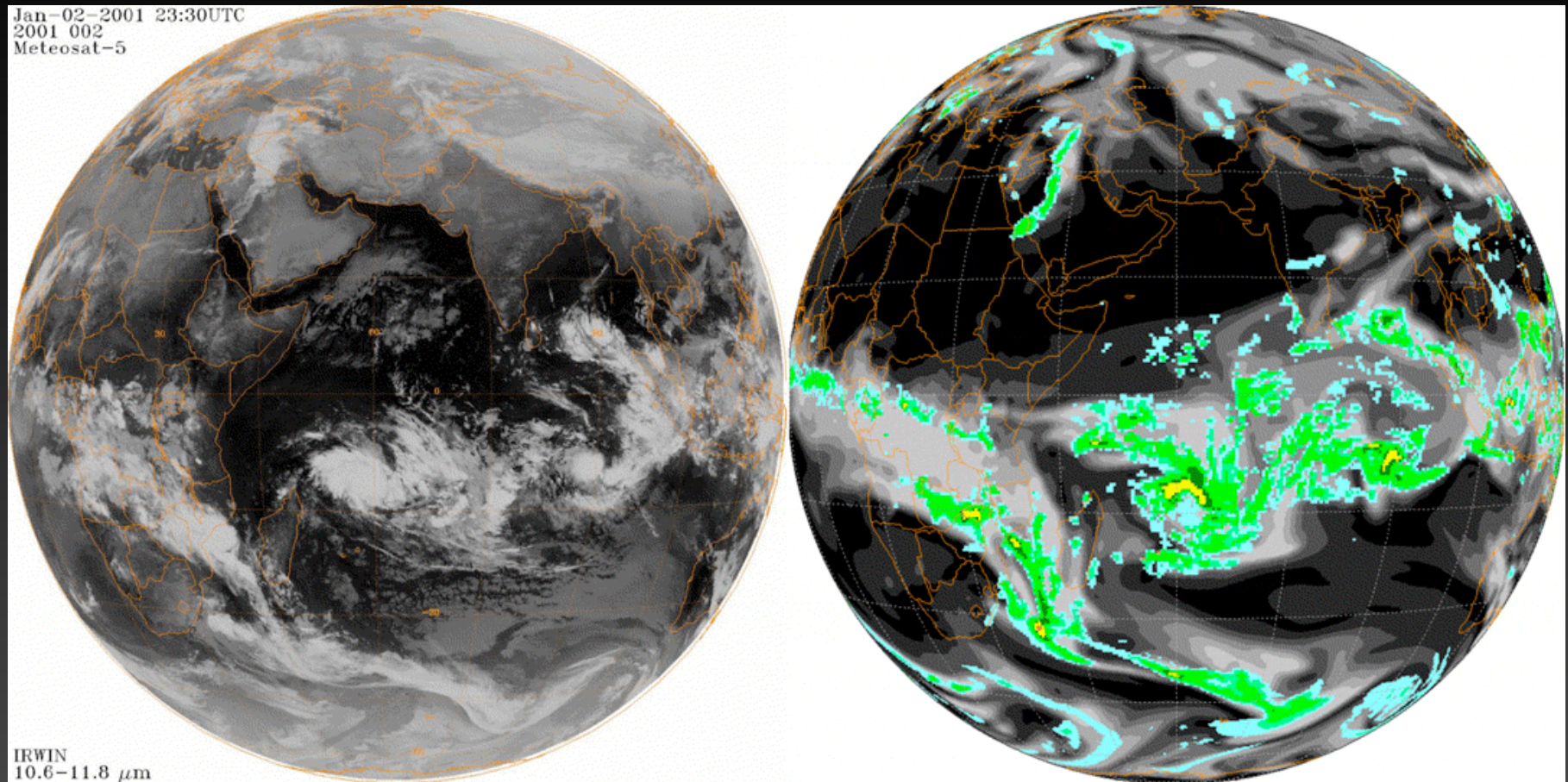
Reducing energy dependence: wind power



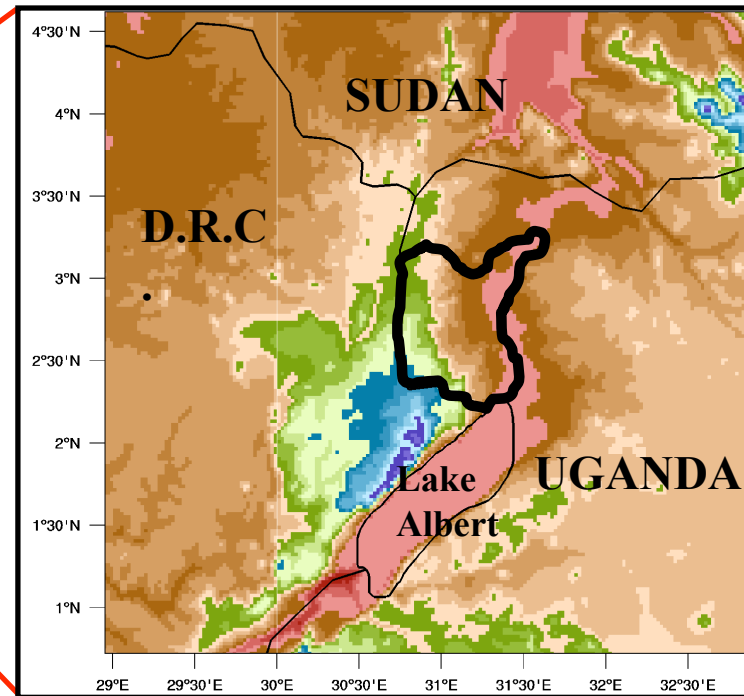
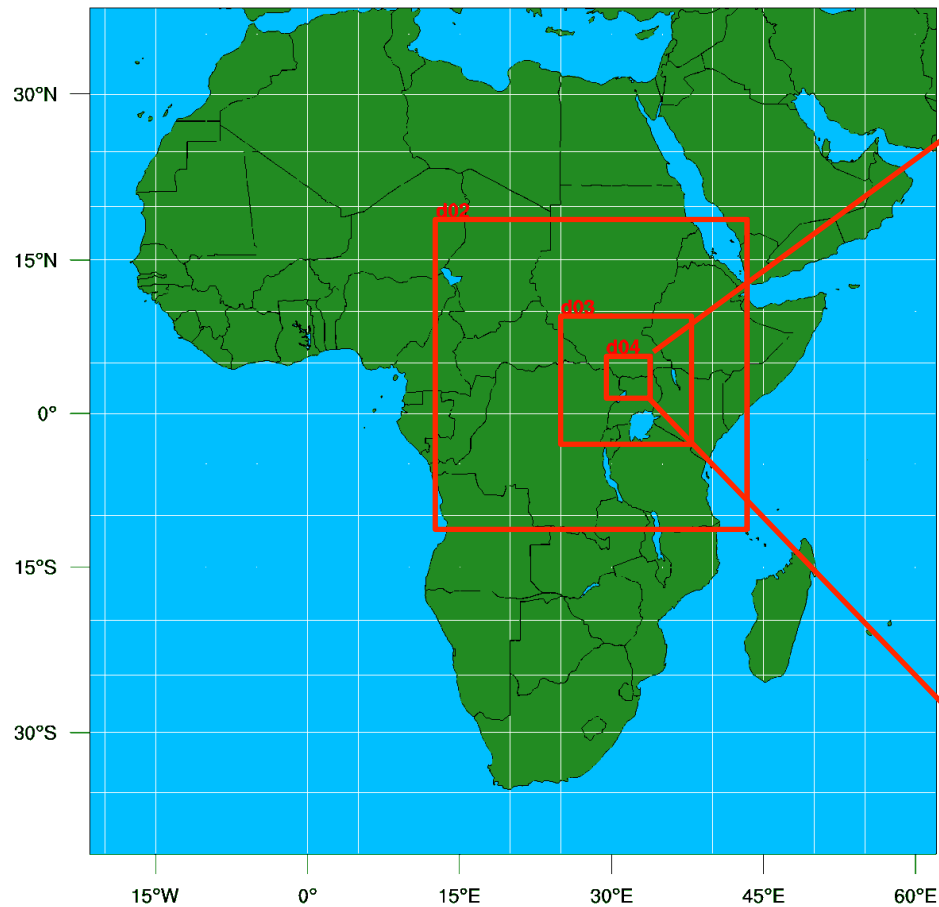
Adding weather details to climate forecasts



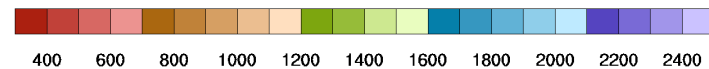
Adding weather details to climate forecasts



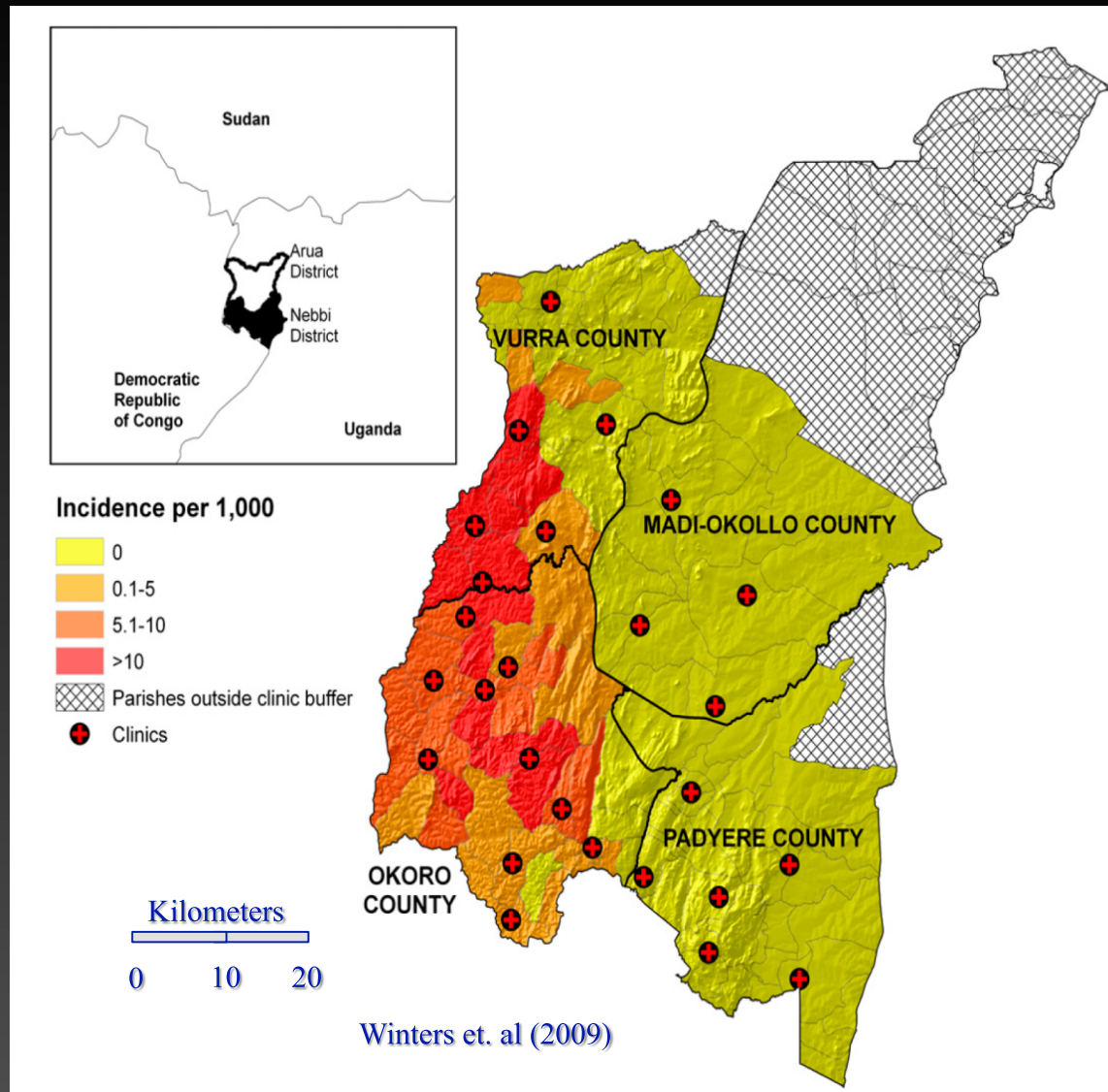
Uganda: predicting plague



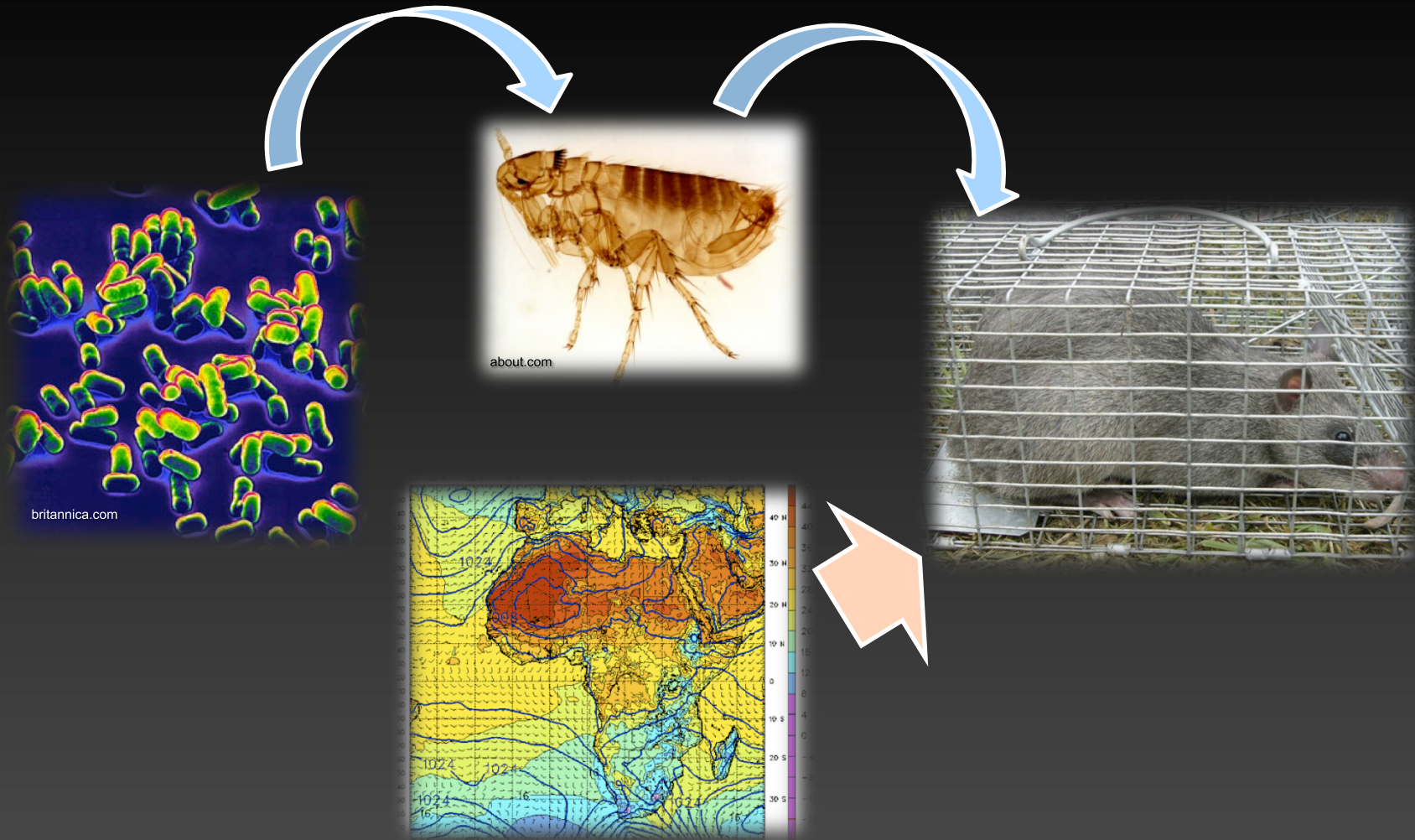
Terrain Elevation (m)



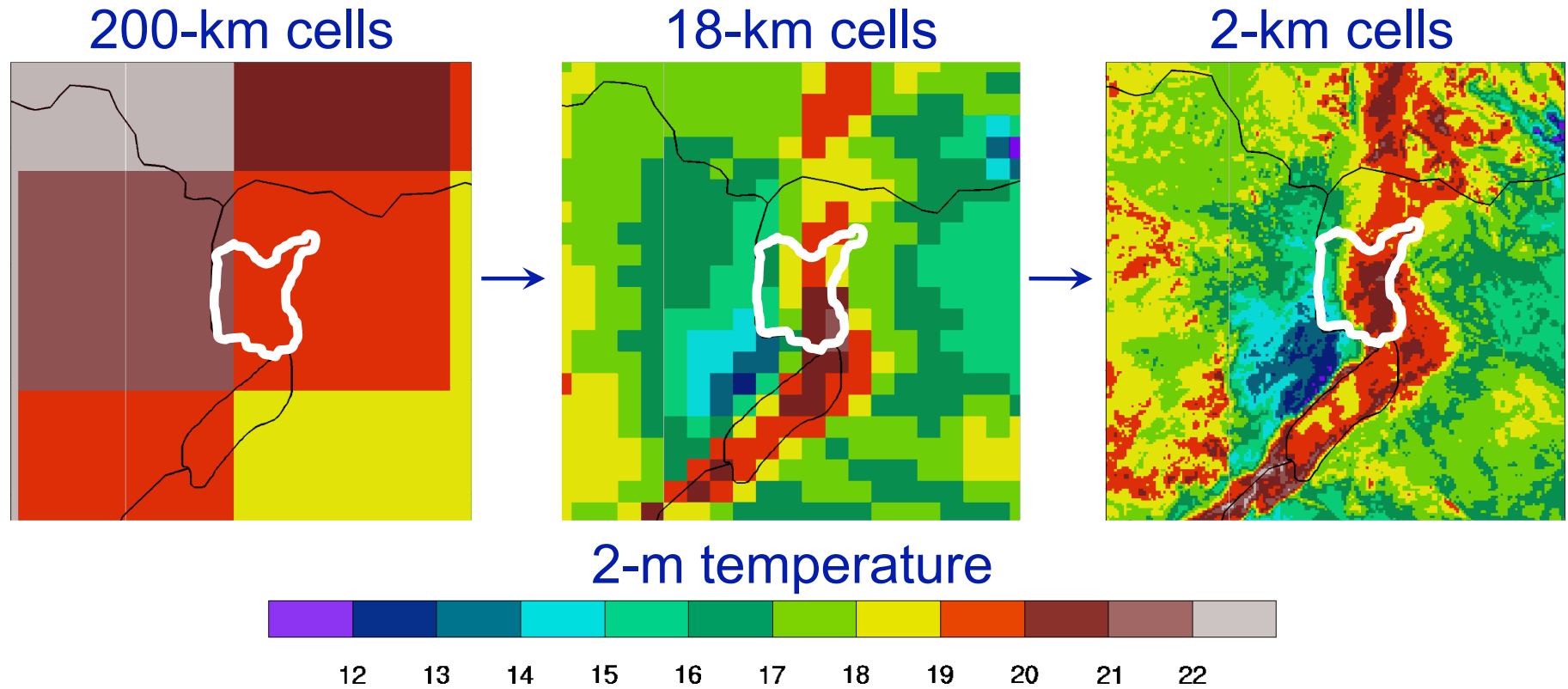
Uganda: predicting plague



Uganda: predicting plague



Uganda: predicting plague



Uganda: predicting plague

Interviewing a witch doctor



Treatment room



Thanks for your attention.

Questions?

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