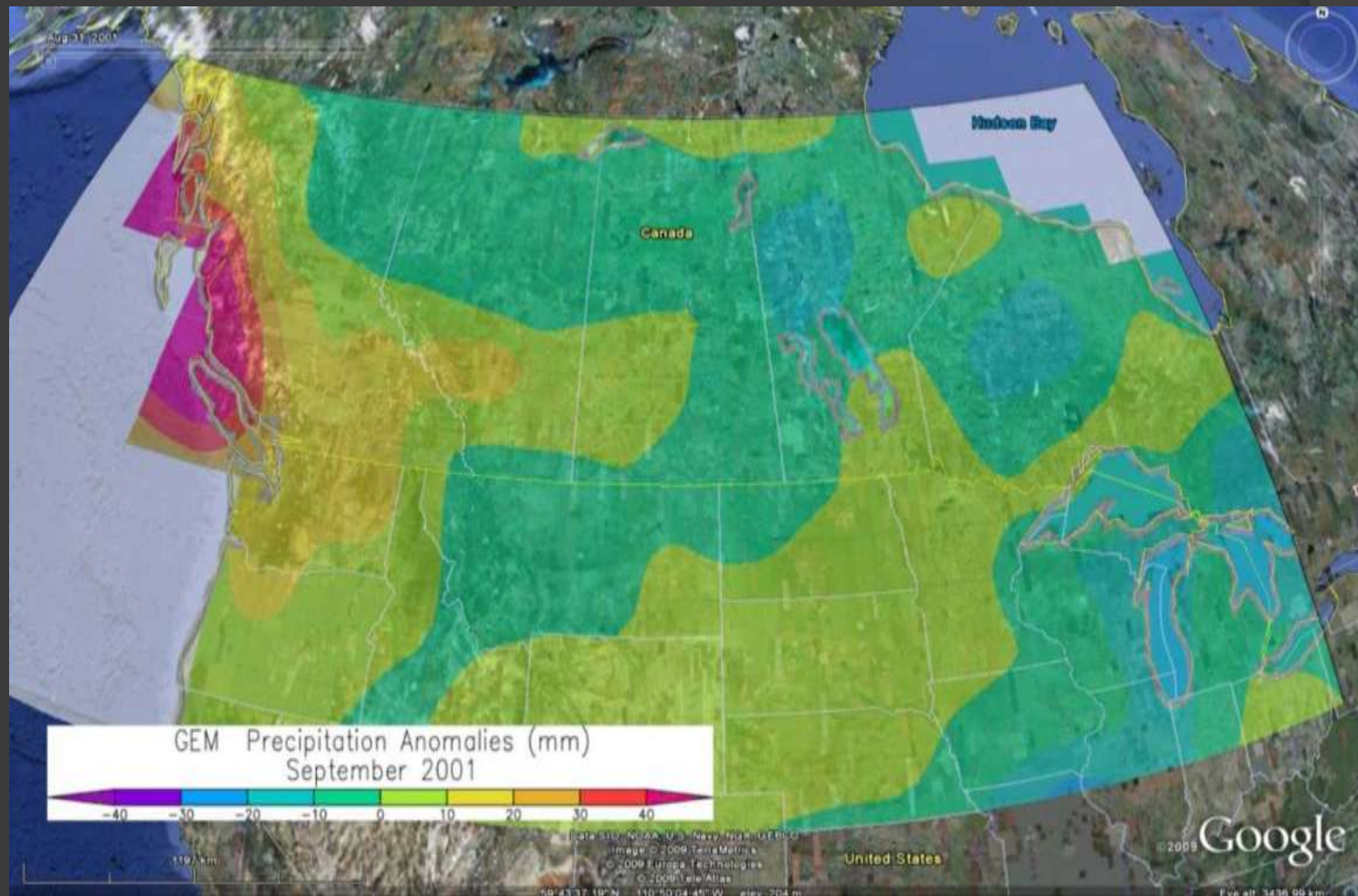


**THE DROUGHT EARLY  
WARNING SYSTEM  
(DEWS) EXERCISE**

# Interpolated vs. Point Data

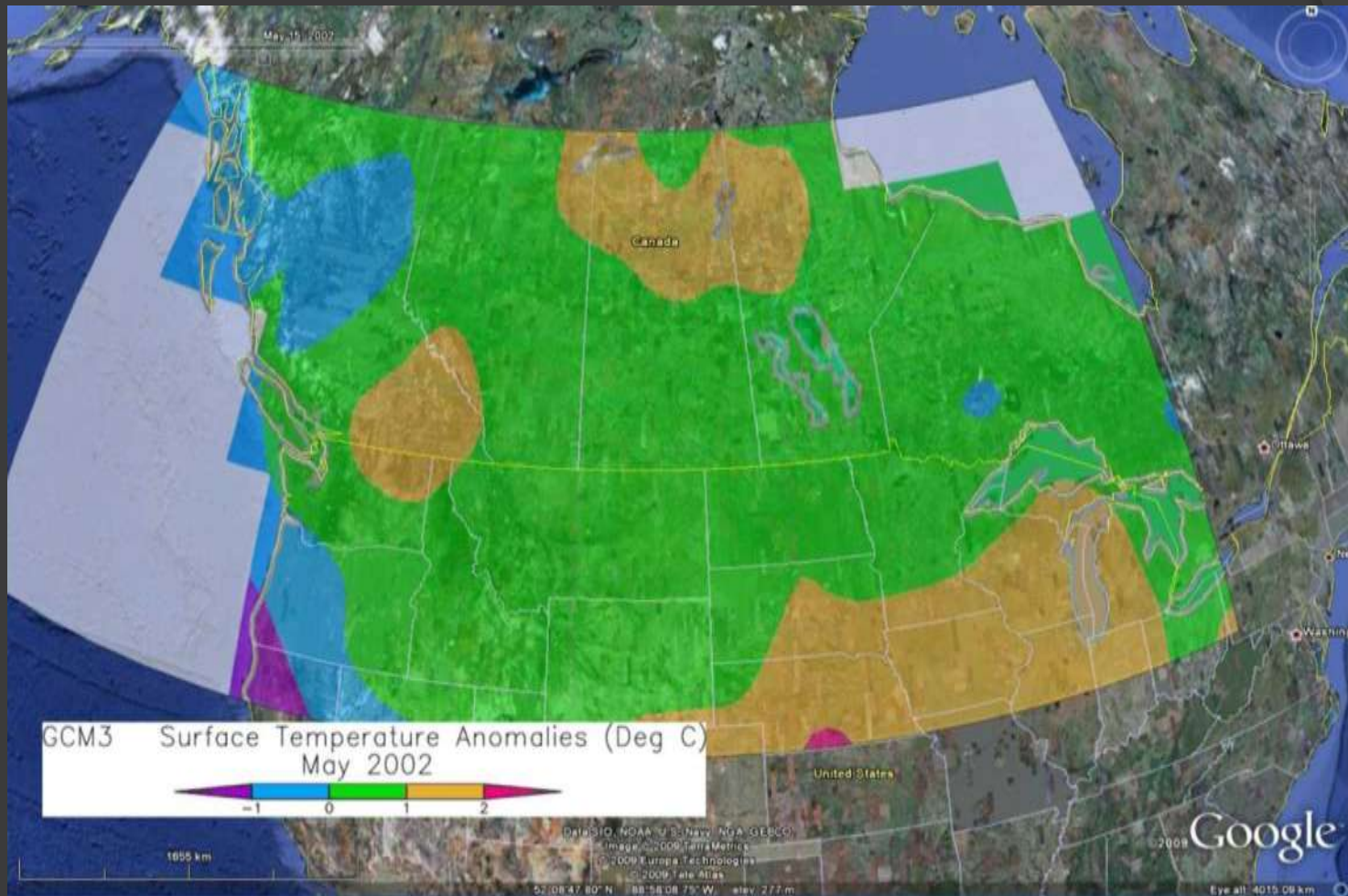
- ⦿ Point data provides information valid at a single location
- ⦿ Interpolated gridded data captures the areal distribution of data in point or modeled data over a region in a systematic manner
  - Common output of models and reanalysed datasets from DRI
  - Different levels of sophistication
    - From simple areal means to taking into account elevation differences
  - Useful in approximating data in areas with no/little data

# Monthly Precipitation Anomaly Forecast May 2002



- Monthly forecasted precipitation amount represented as an anomaly with units of mm

# Monthly Temperature Anomaly Forecast May 2002

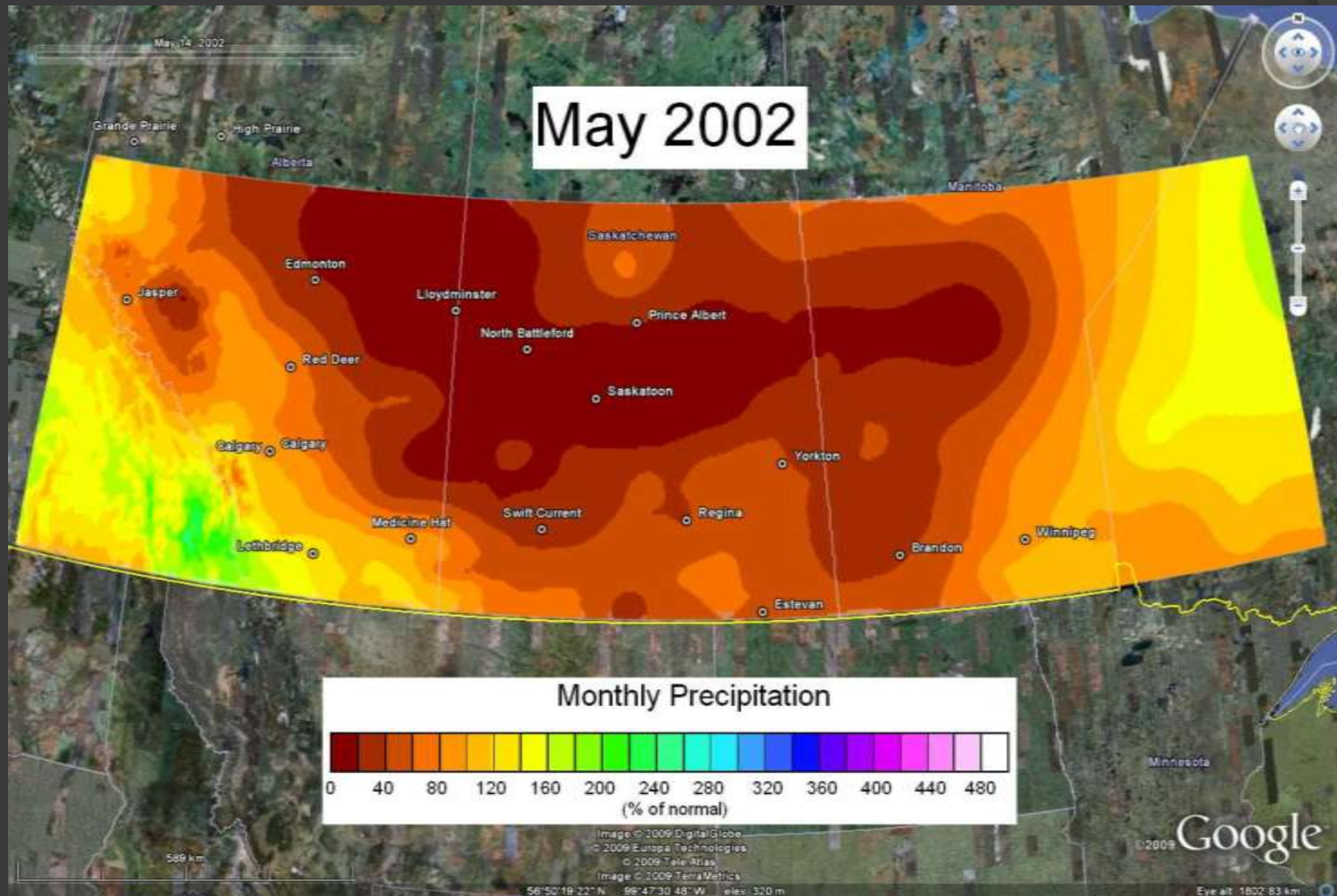


- Predicted surface temperature represented as an anomaly with units of degrees Celsius



# Monthly Precipitation Anomaly

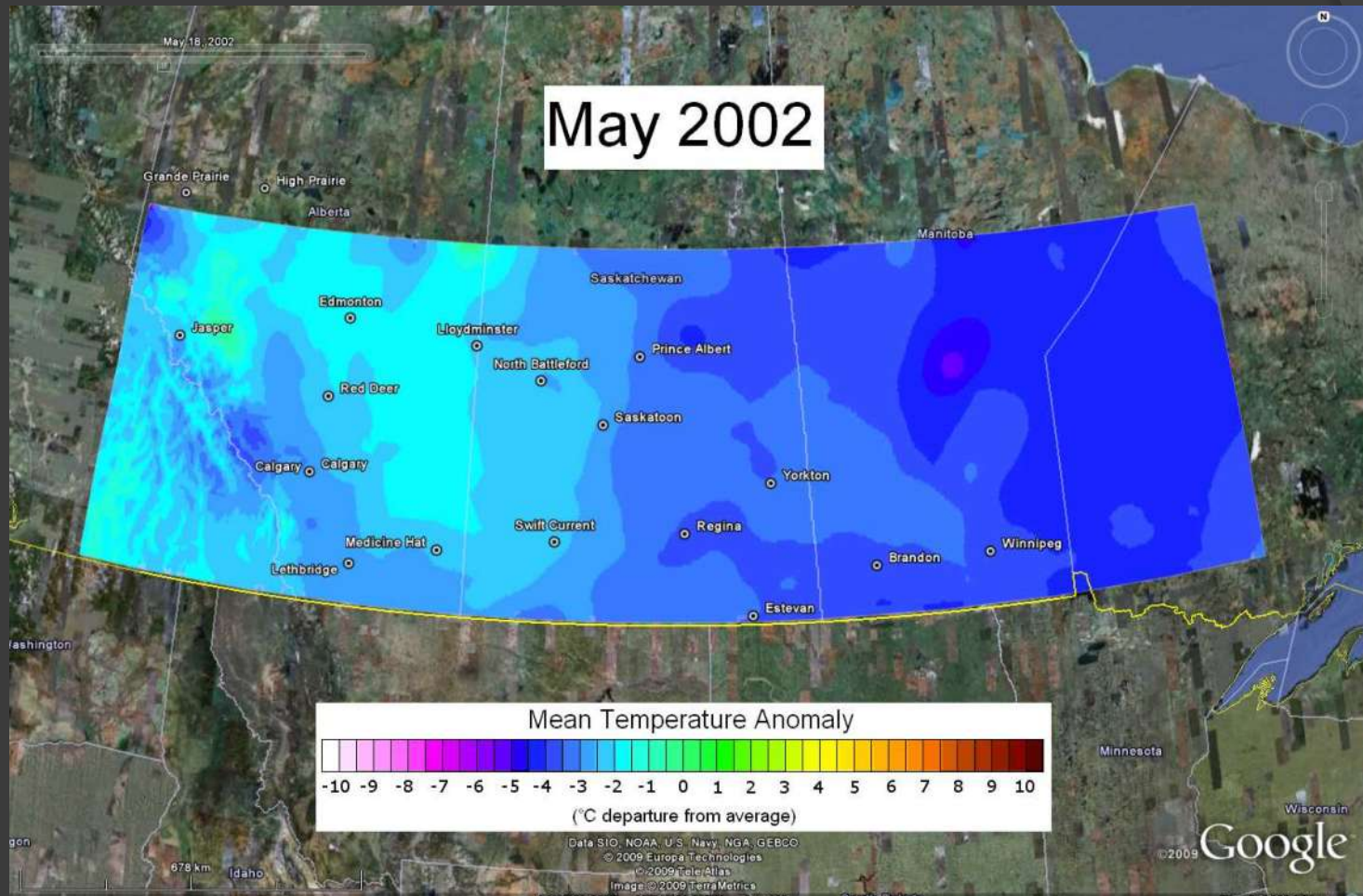
## May 2022



- Gridded precipitation, from a quality controlled dataset that interpolates with a spline technique (ANUSPLIN)

# Monthly Temperature Anomaly

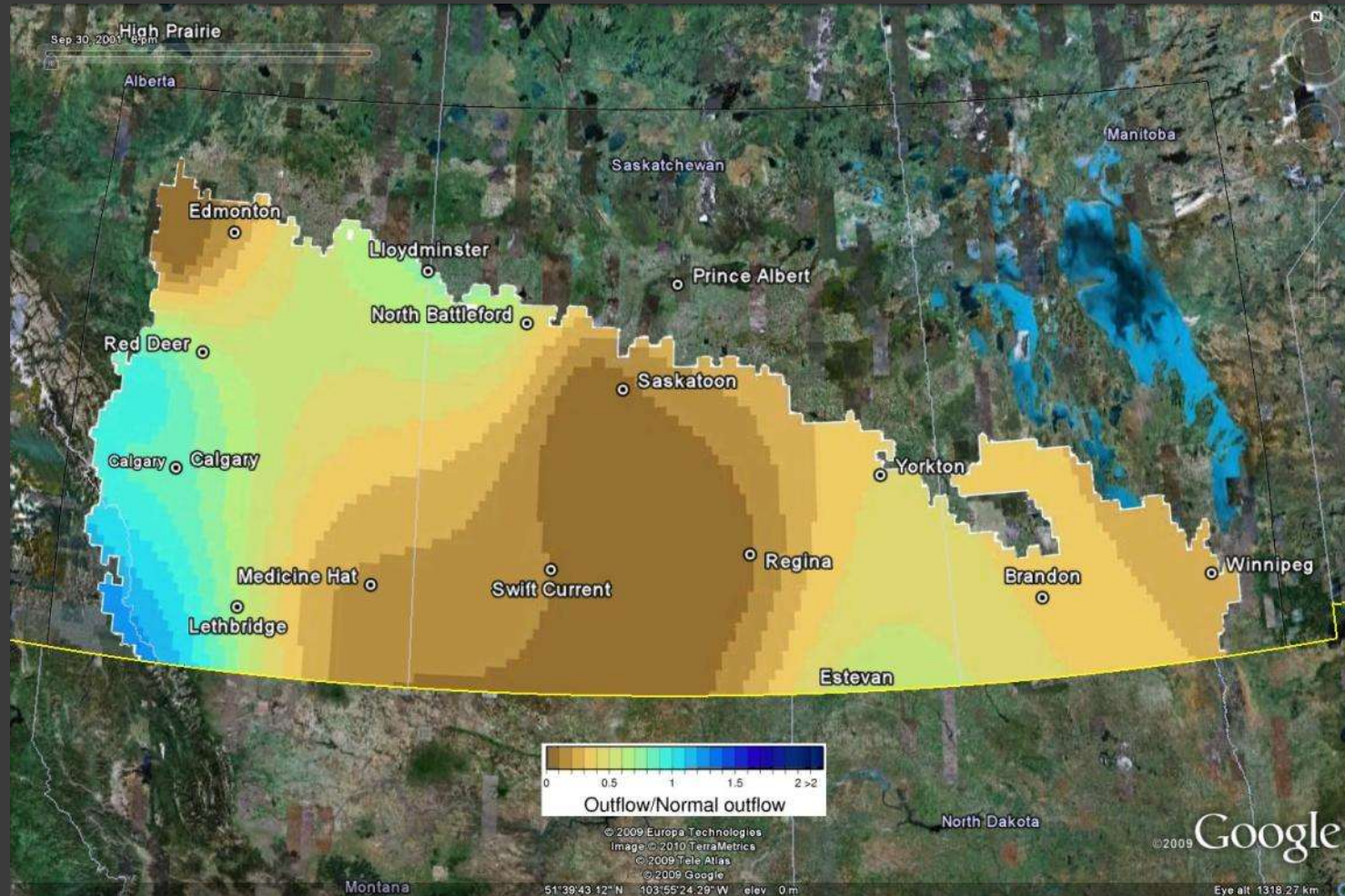
## May 2002



- Gridded surface temperature, from a quality controlled dataset that interpolates with a spline technique (ANUSPLIN)

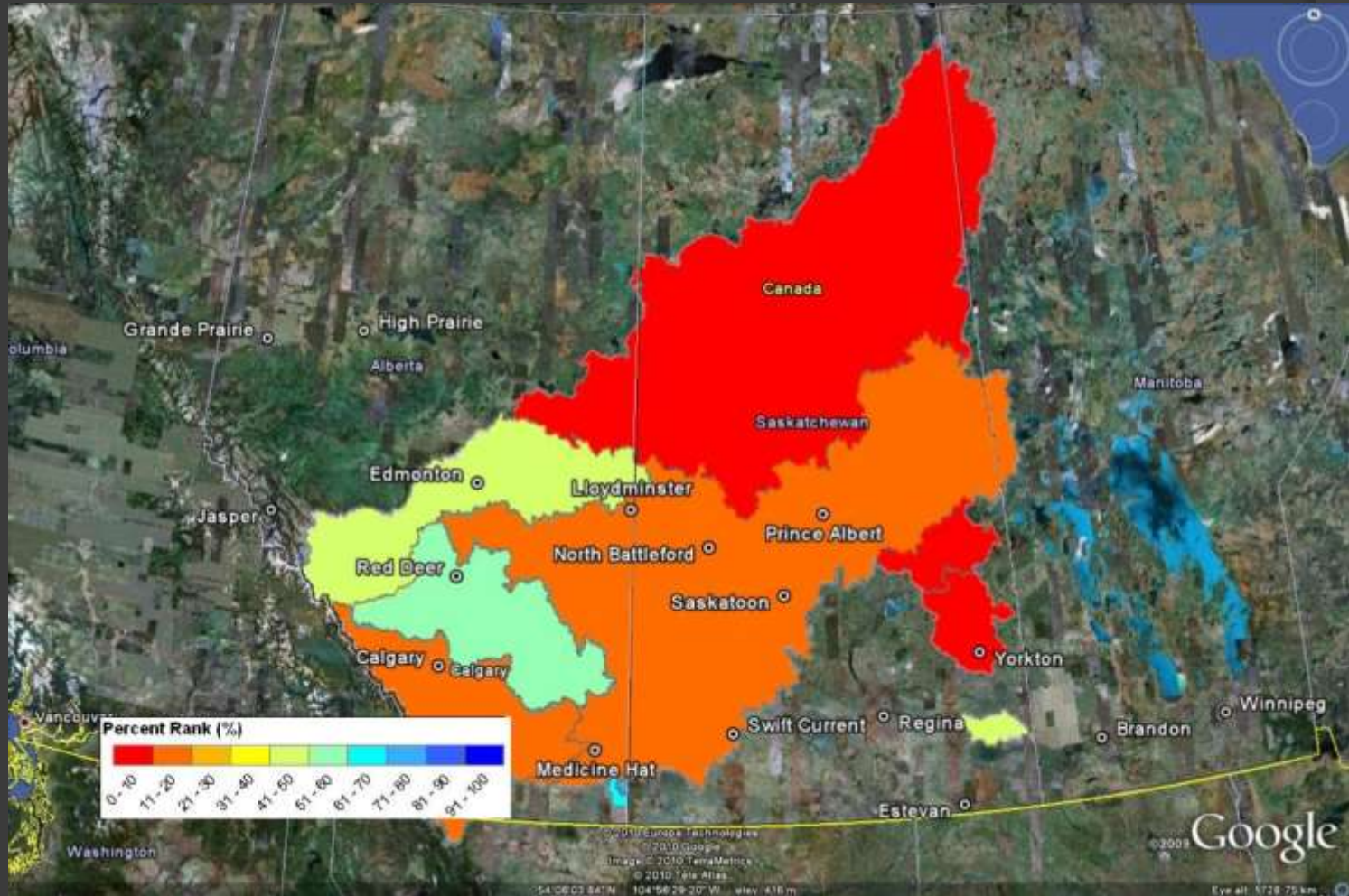


# Modelled Runoff Spring 2002



- Outflow (spring runoff) from a typical small prairie basin simulated across the prairies.
- The mapped value is standardized as a ratio of calculated outflow/normal outflow.

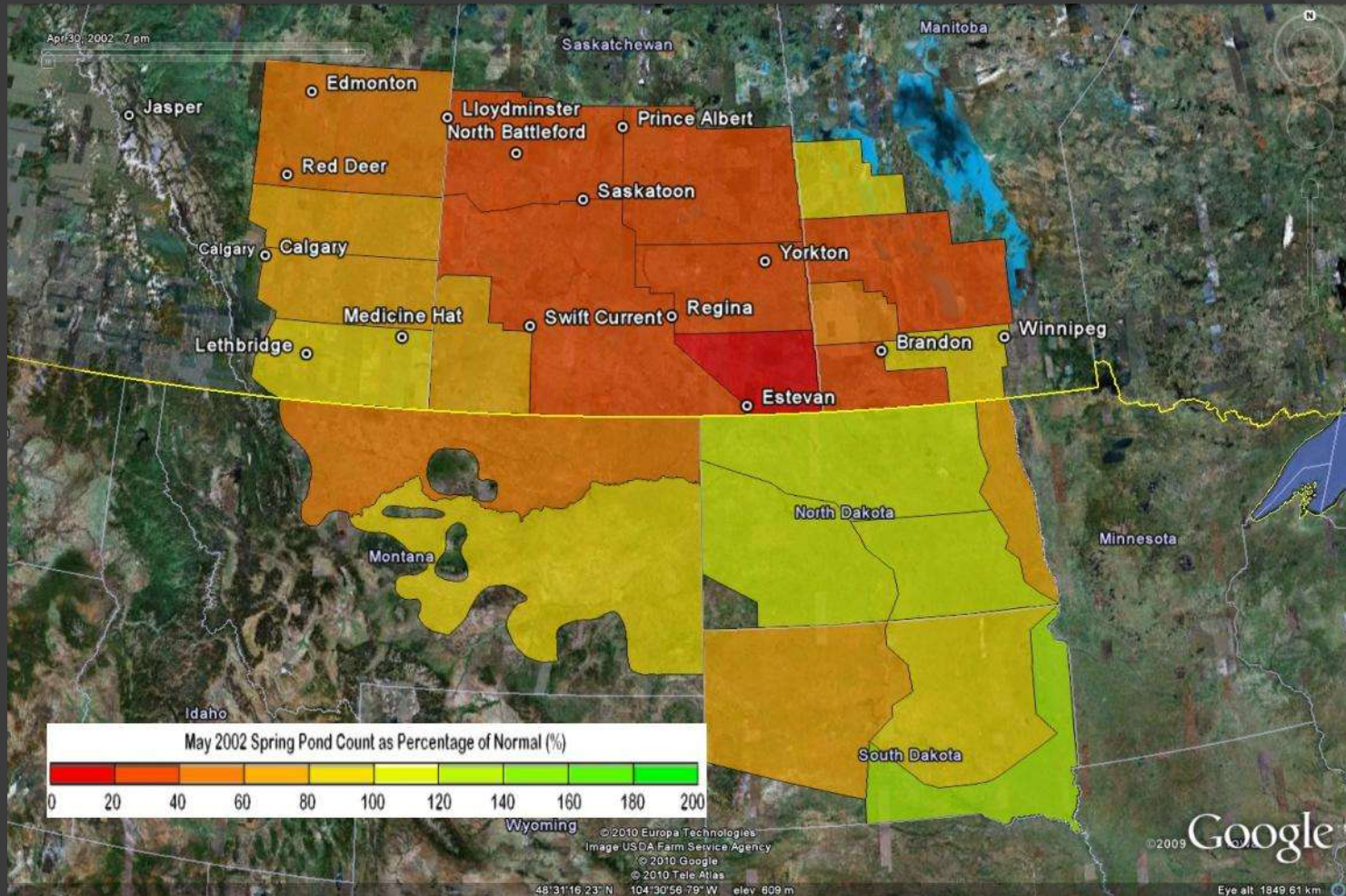
# Percent Rank Naturalized Streamflow May 2002



- The monthly streamflow represented as a percentage rank of monthly naturalized flows
- 0-10 is record low, 10-20 near record low, 20-30 very low, 30-40 below normal 40-60 near normal, vice versa



# Spring Pond Count May 2002



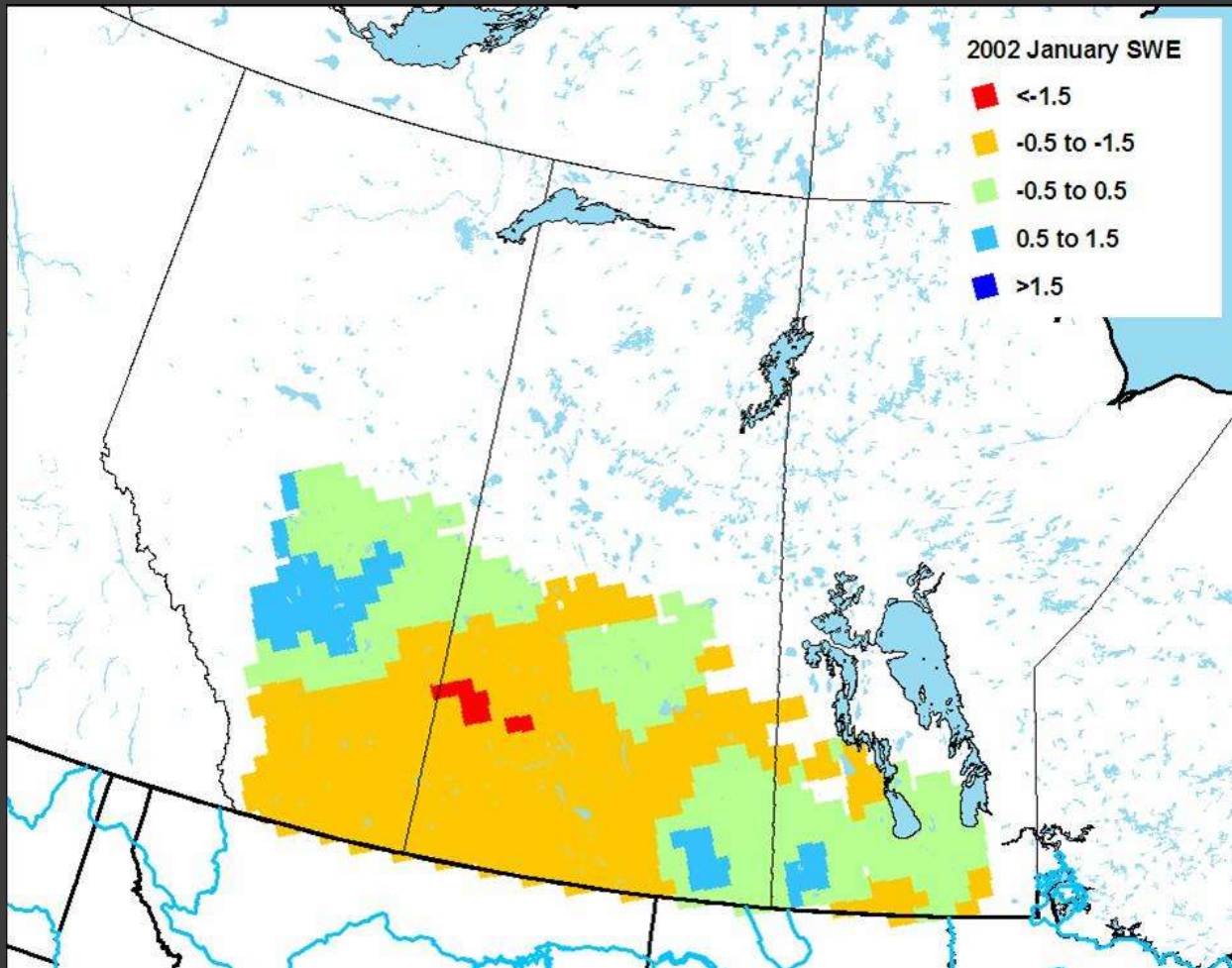
- The estimated number of spring ponds (sloughs, wetlands, filled ditches) represented as a percentage of ponds normally counted





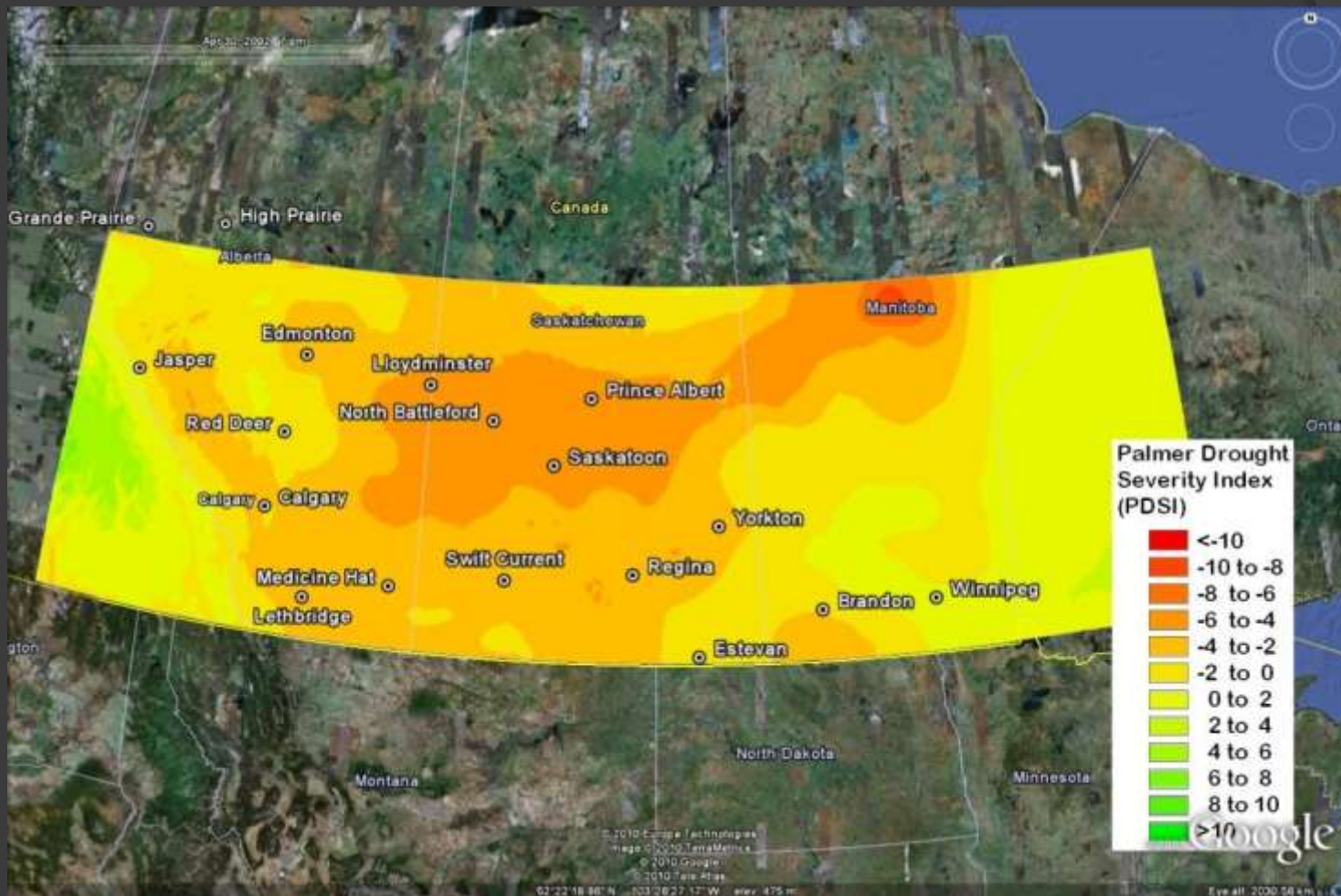
# Snow Water Equivalent

## Jan 2002



- SWE is a measurement that represents the liquid equivalent of snow
- The SWE is represented as an anomaly in terms of standard deviation
- <-1.5 is extremely dry, -1.5 to -0.5 is below normal, -0.5 to 0.5 is near normal, 0.5 to 1.5 is above normal, >1,5 is extremely wet.

# Palmer Drought Severity Index May 2002

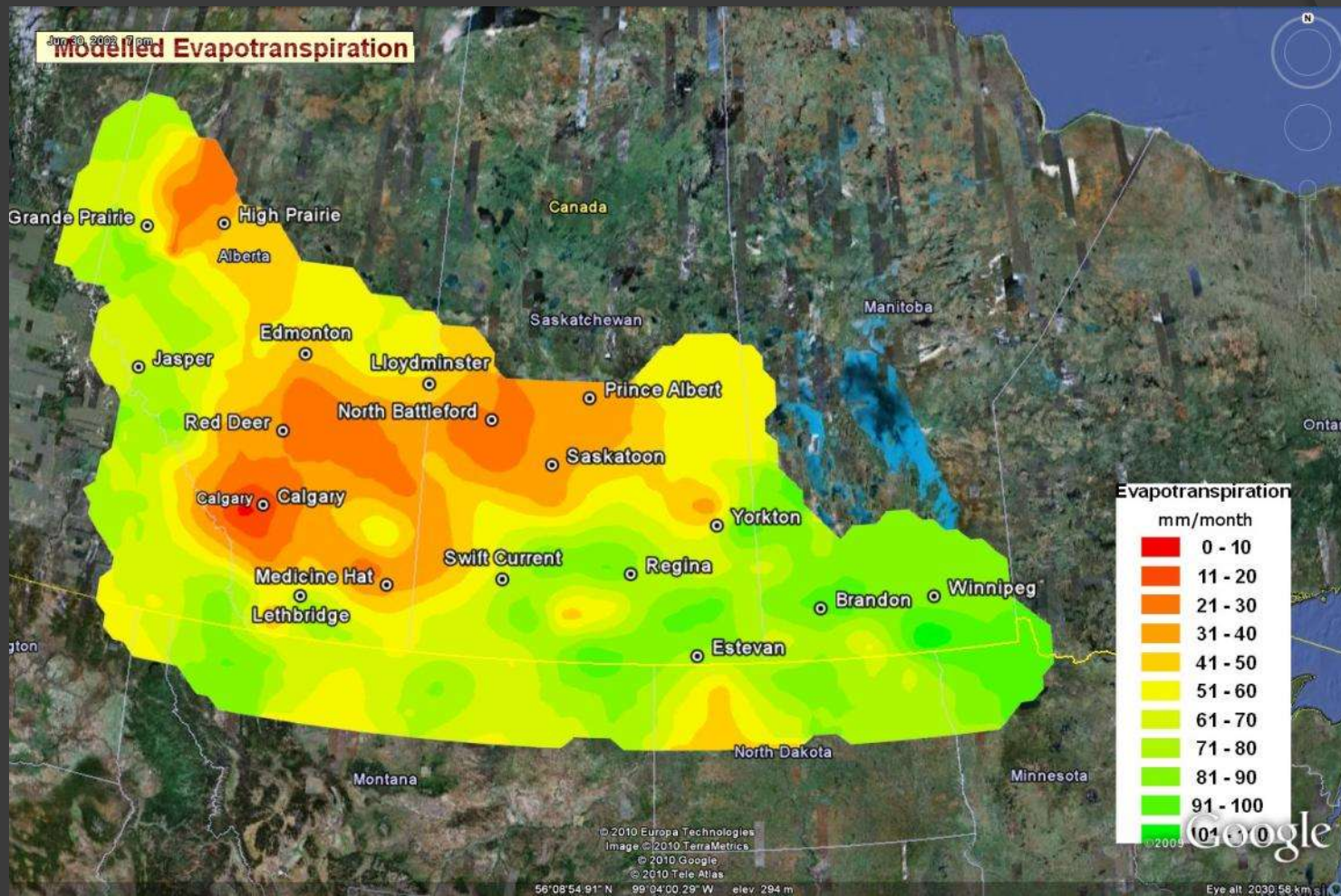


- An index based on temperature and precipitation that reflects dryness. It is a good indicator of meteorological drought
- >4 is extremely wet, 4 to 2 is moderately wet, 0 is normal, -2 to -4 moderately drought, <-4 severe drought



# Evapotranspiration

## July 2002

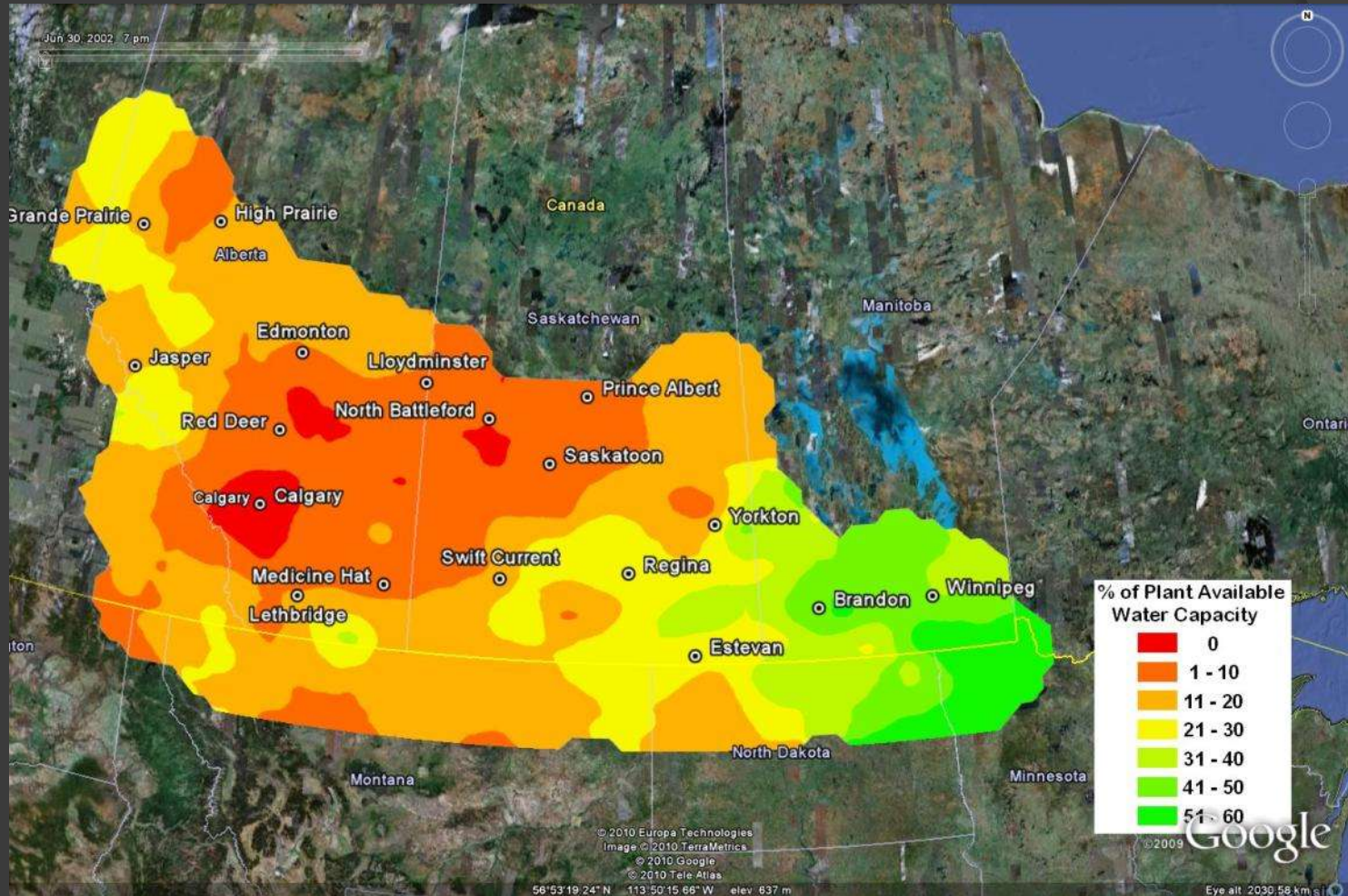


- ET is the flux of moisture from the surface to the atmosphere through plant transpiration and evaporation
- ET is restricted by available moisture so areas with low ET values represent dry areas and vice versa



# Plant Available Water

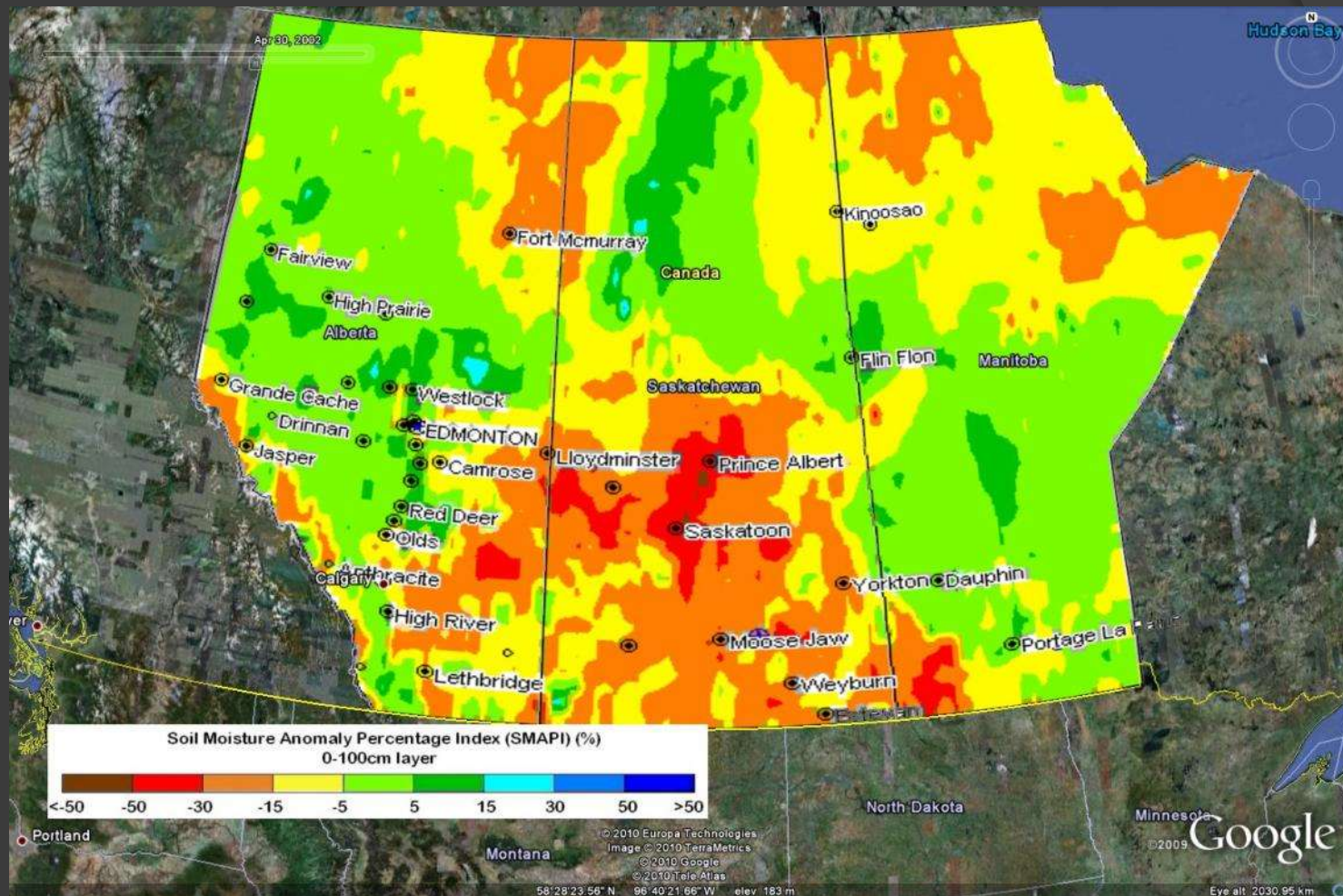
## July 2002



- PAW is a measure of soil moisture that is available for plants and calculated here by the PAM-II model.
- For wheat a PAW value below 30% indicates that plant is highly stressed and not putting little energy into growing/producing grain

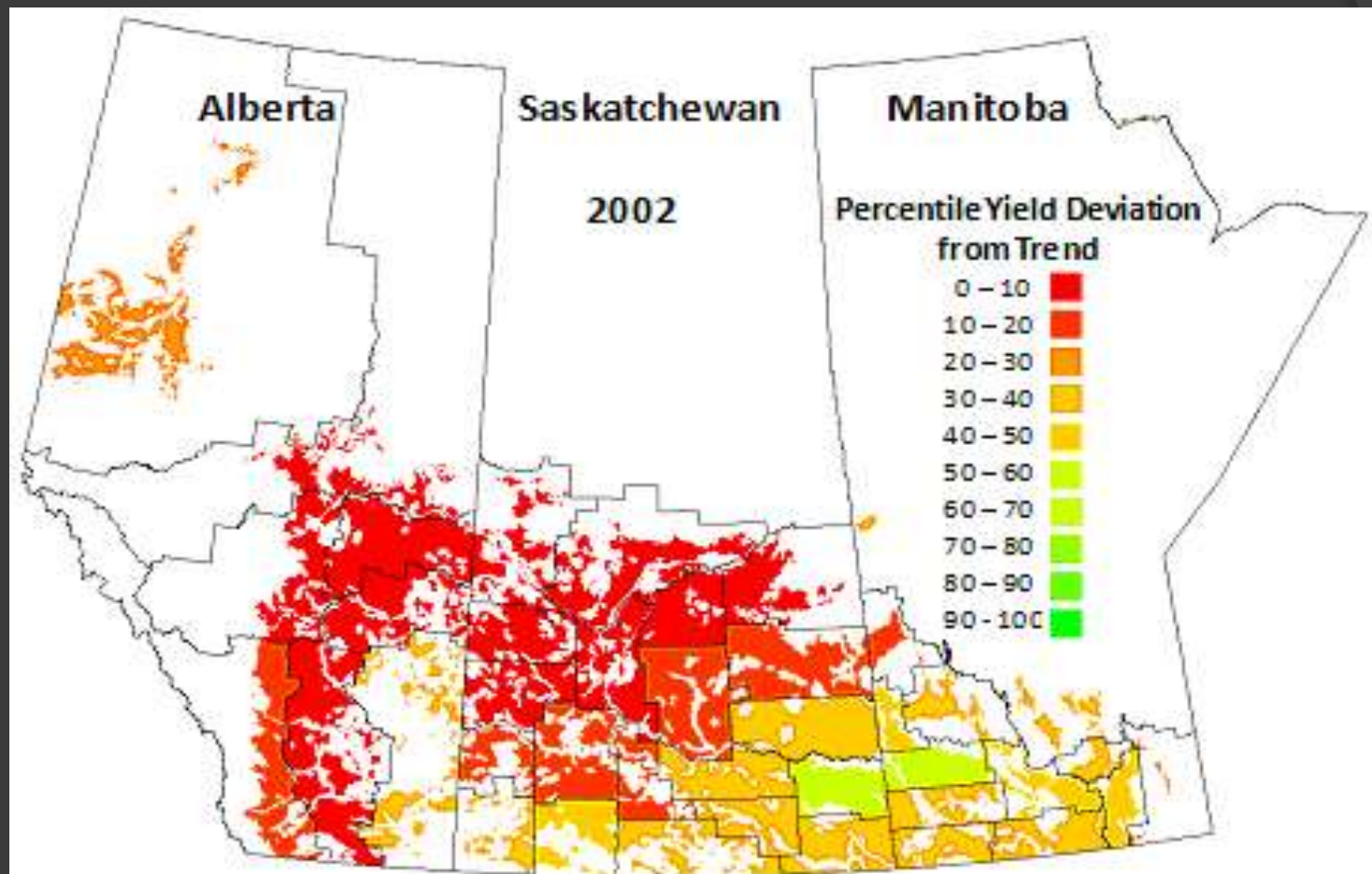


# Soil Moisture Anomaly Percentage Index May 2002



- Using a hydrological model (VIC) which takes into account non-contributing areas a longer term climatology of soil moisture has been calculated.
- Soil moisture is calculated on a grid and represented as an anomaly in terms of percentage of normal

# Yield Deviation Crop Year 2002



- Percentile yield deviation from trend by Census Agricultural Region
- Values for each CAR are the area-weighted means for yield deviation from trend for spring wheat, barley, canola and field peas.