

RegCM3

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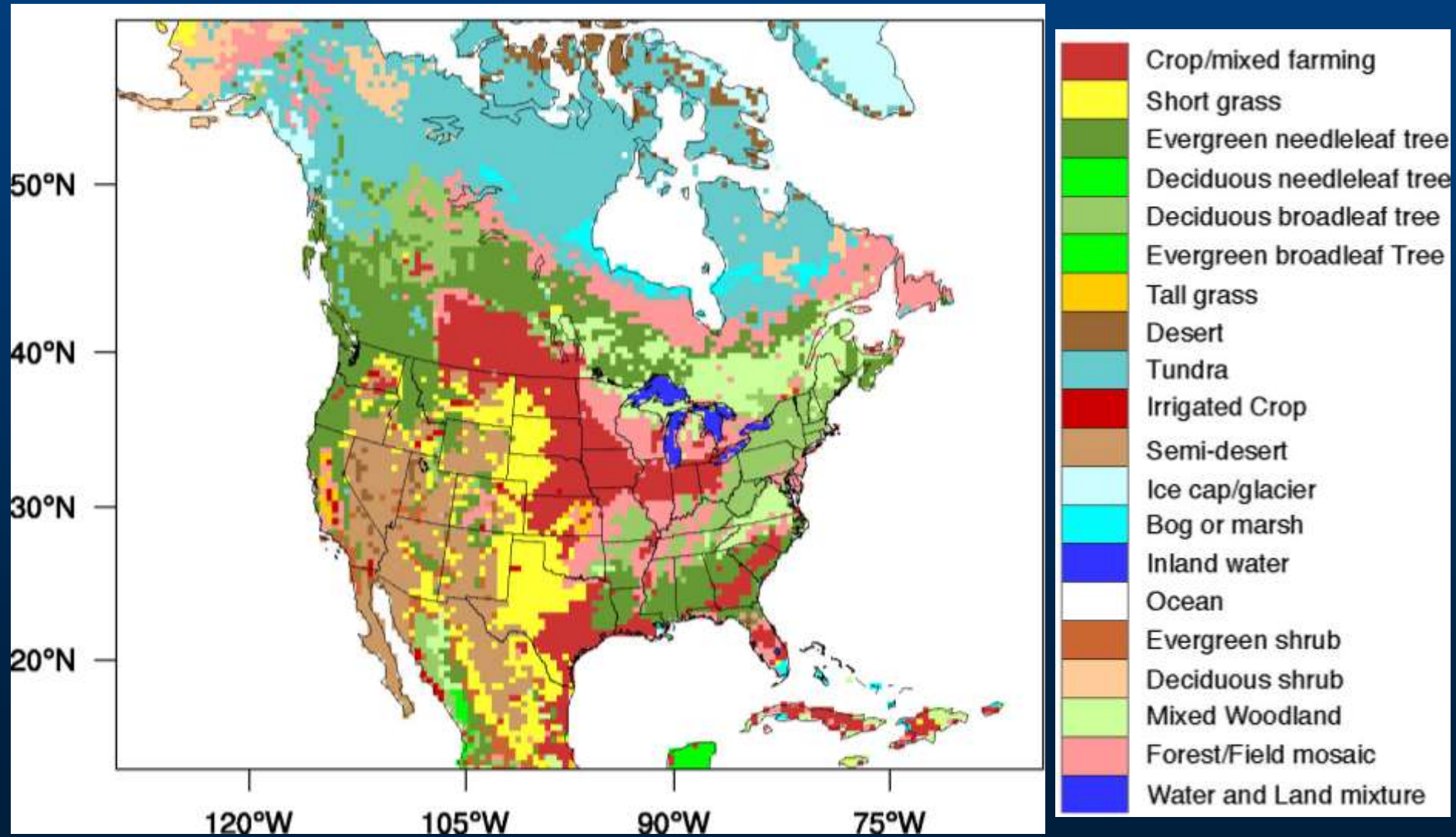
RegCM3 Details

- Hydrostatic equations
- Sigma coordinates in vertical (terrain following)
- BATS1E land surface model
- Zeng ocean flux parameterization (atm/ocean fluxes)
- SUBEX large scale precipitation parameterization
- Grell convective precipitation parameterization
- CCM3 radiation scheme
- Pal et al. 2007, Bulletin of the American Meteorological Society (BAMS) provides more info

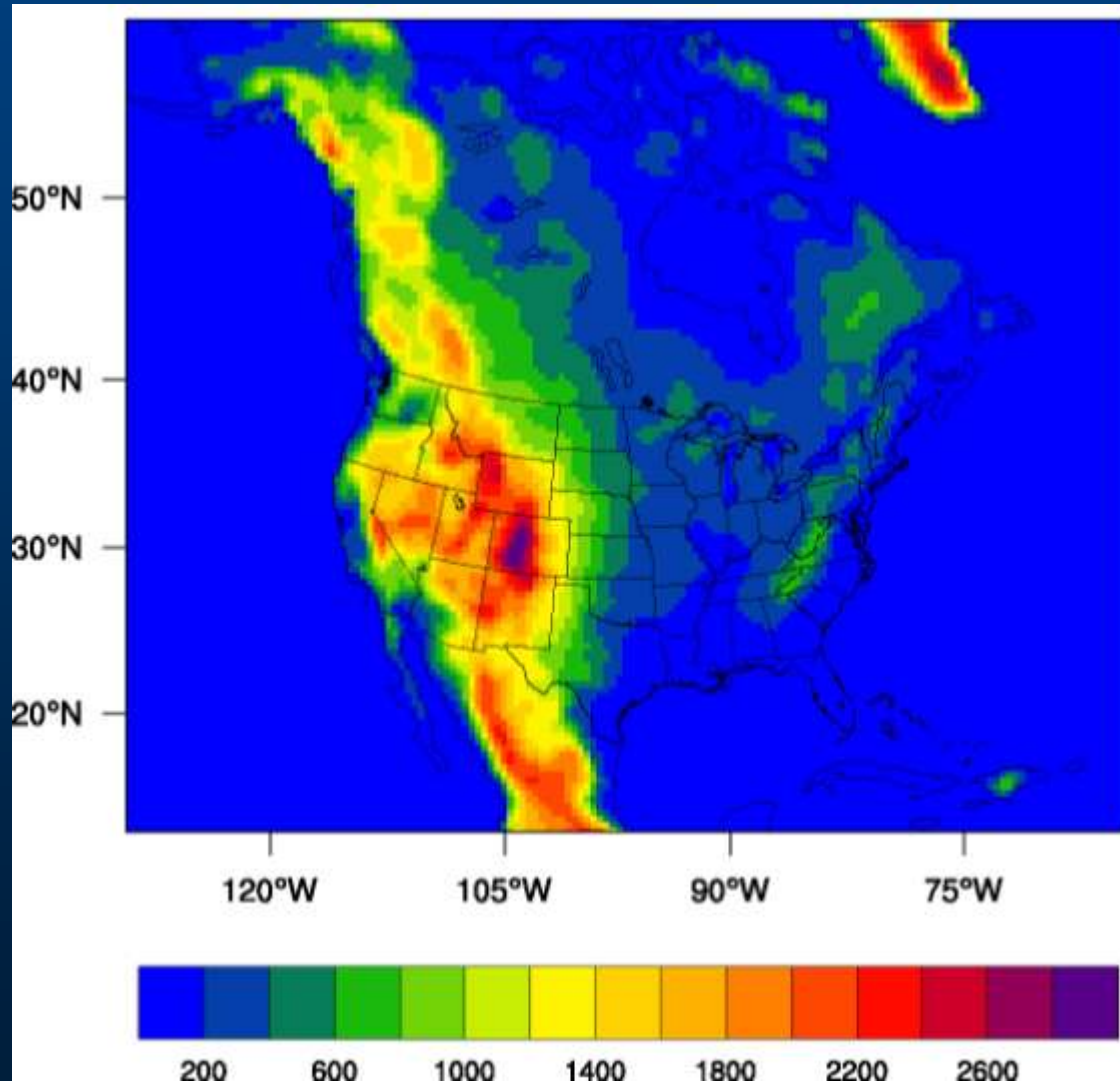
RegCM3 Domain Details

- Horizontal resolution of 50 x 50 km
- Vertical resolution of 18 levels
- Rotated Mercator projection, 130 north-south grid cells, 160 east-west gridcells
- Centered over North America at 47.5 N and 97.0 W

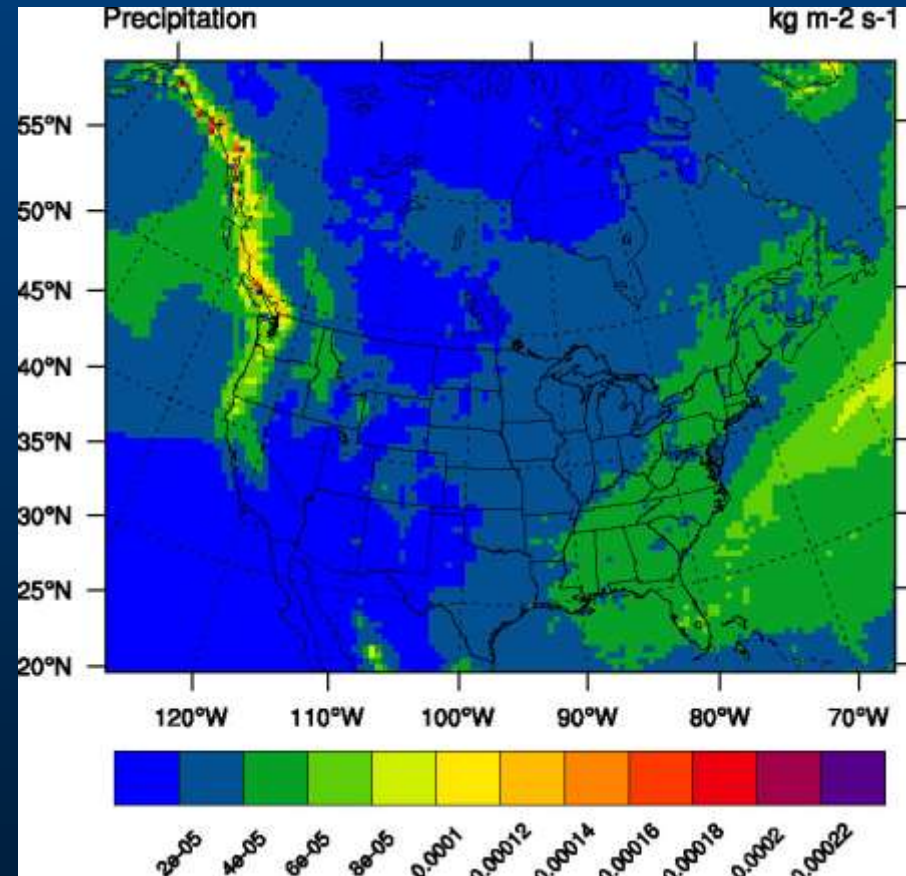
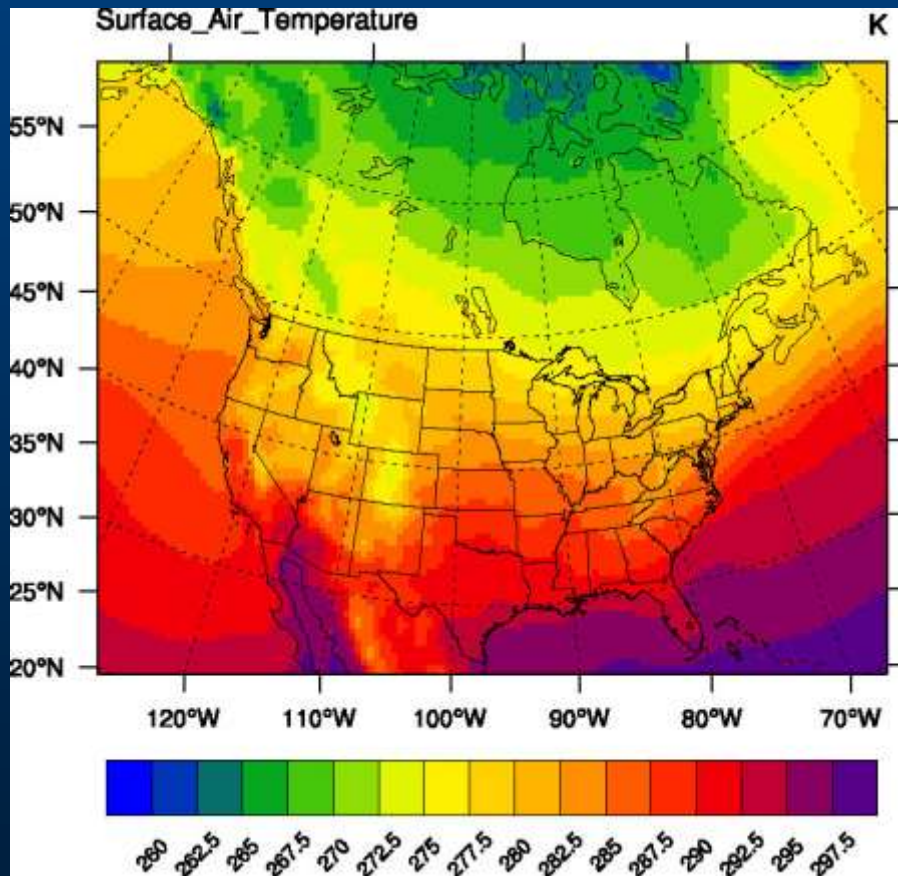
RegCM3 Land Cover Types



RegCM3 Topography (m)



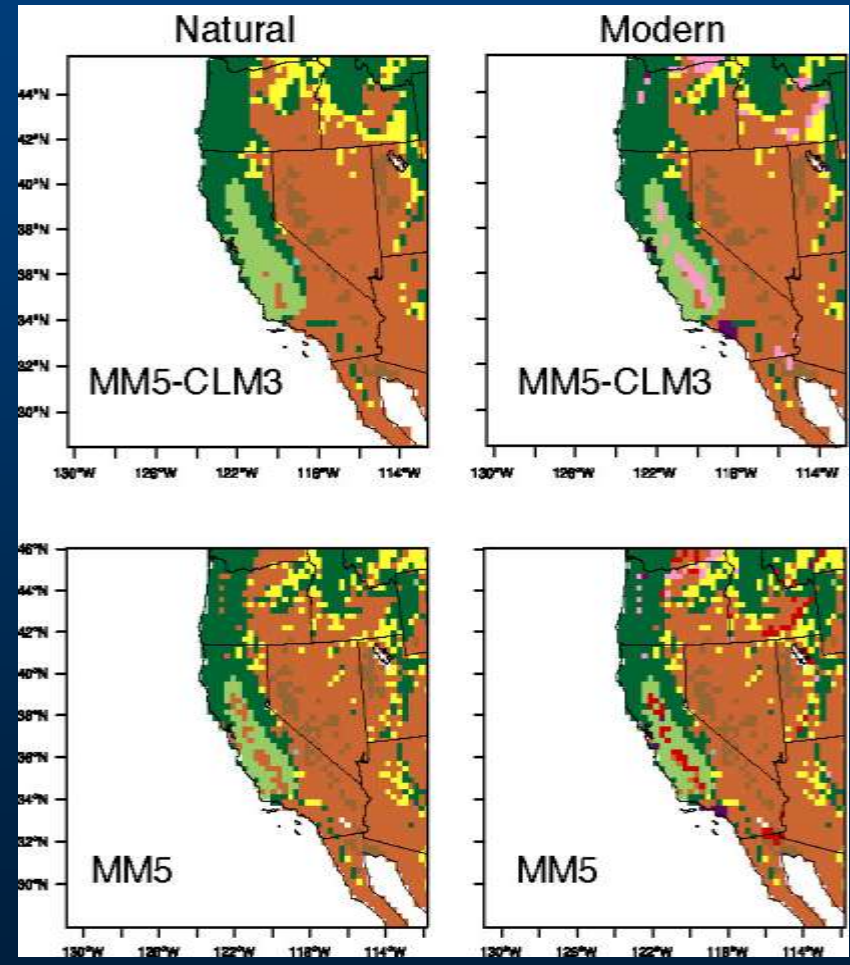
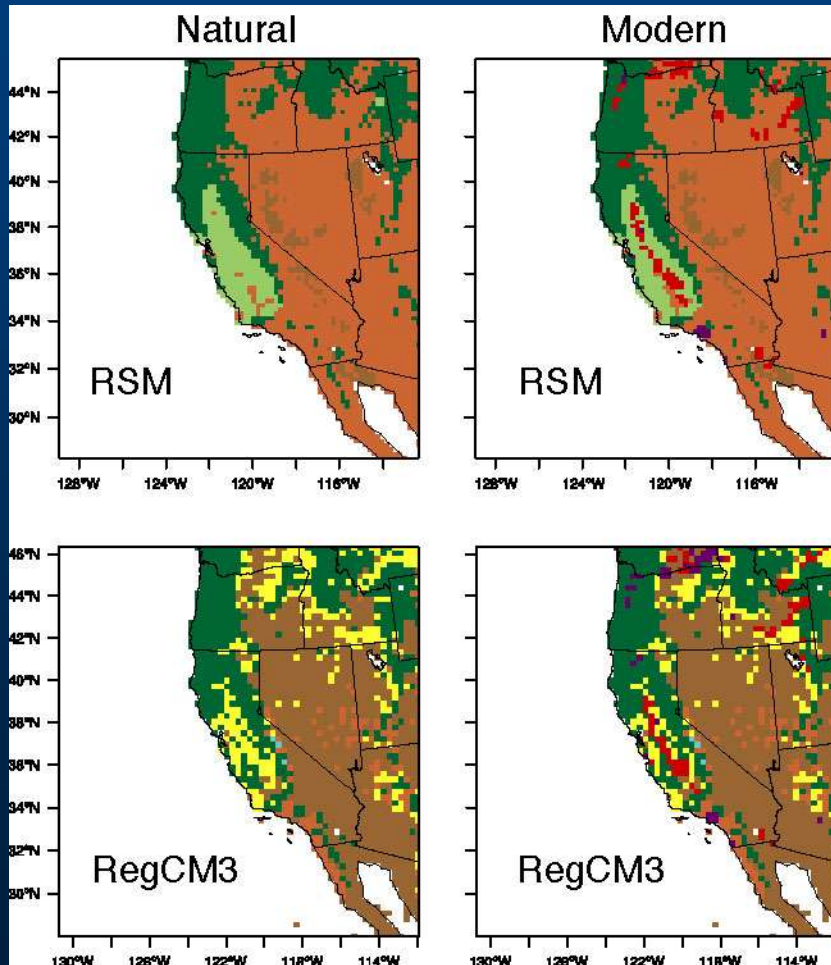
Temperature and Precipitation - samples from NARCCAP control run



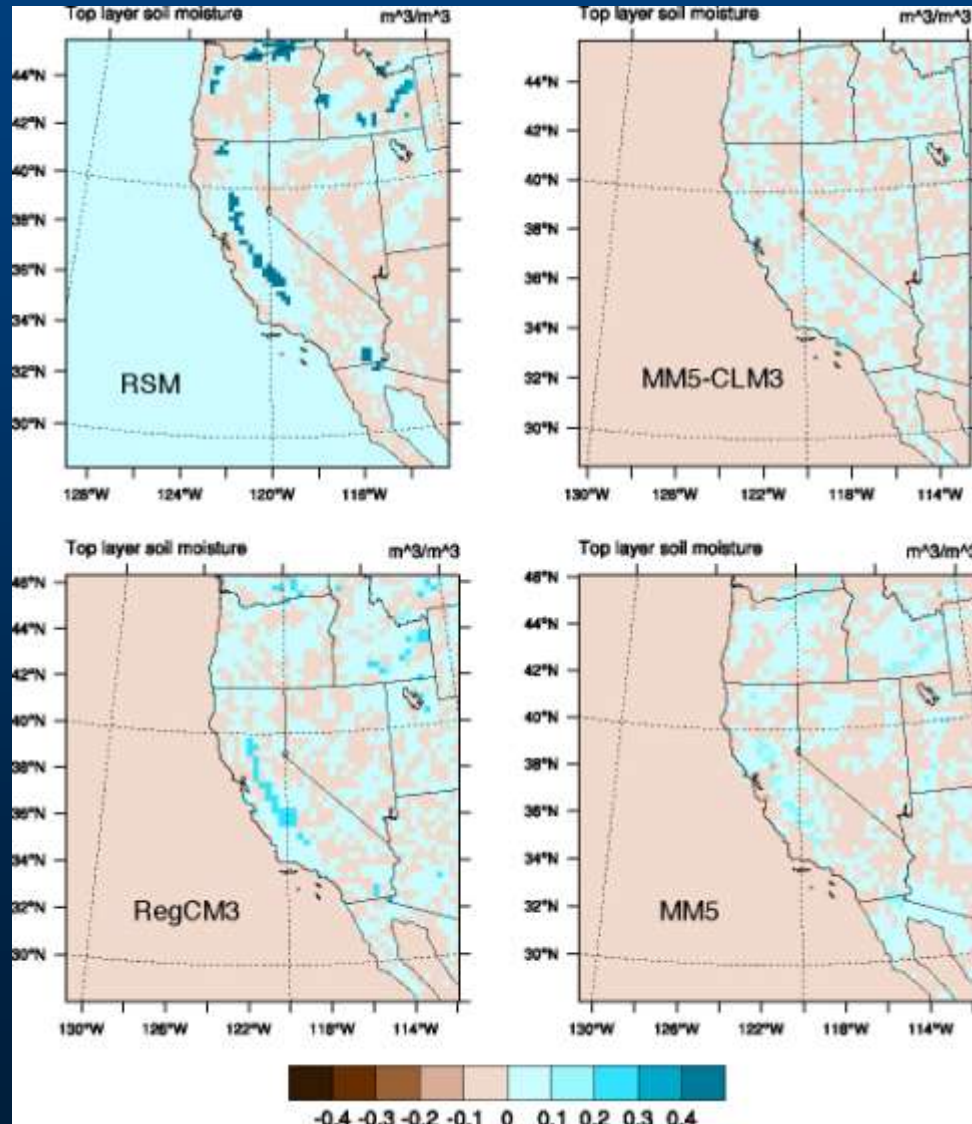
California Energy Commission (CEC) Land Cover Intercomparison

- Four regional climate models - RegCM3 (UCSC), MM5-CLM3 (LBL), RSM (Scripps), MM5 (UC Davis)
- Comparison of potential natural land cover to modern land cover
- Seasonal impact 1995 - 1996
- Kueppers et al., 2008 Global and Planetary Change

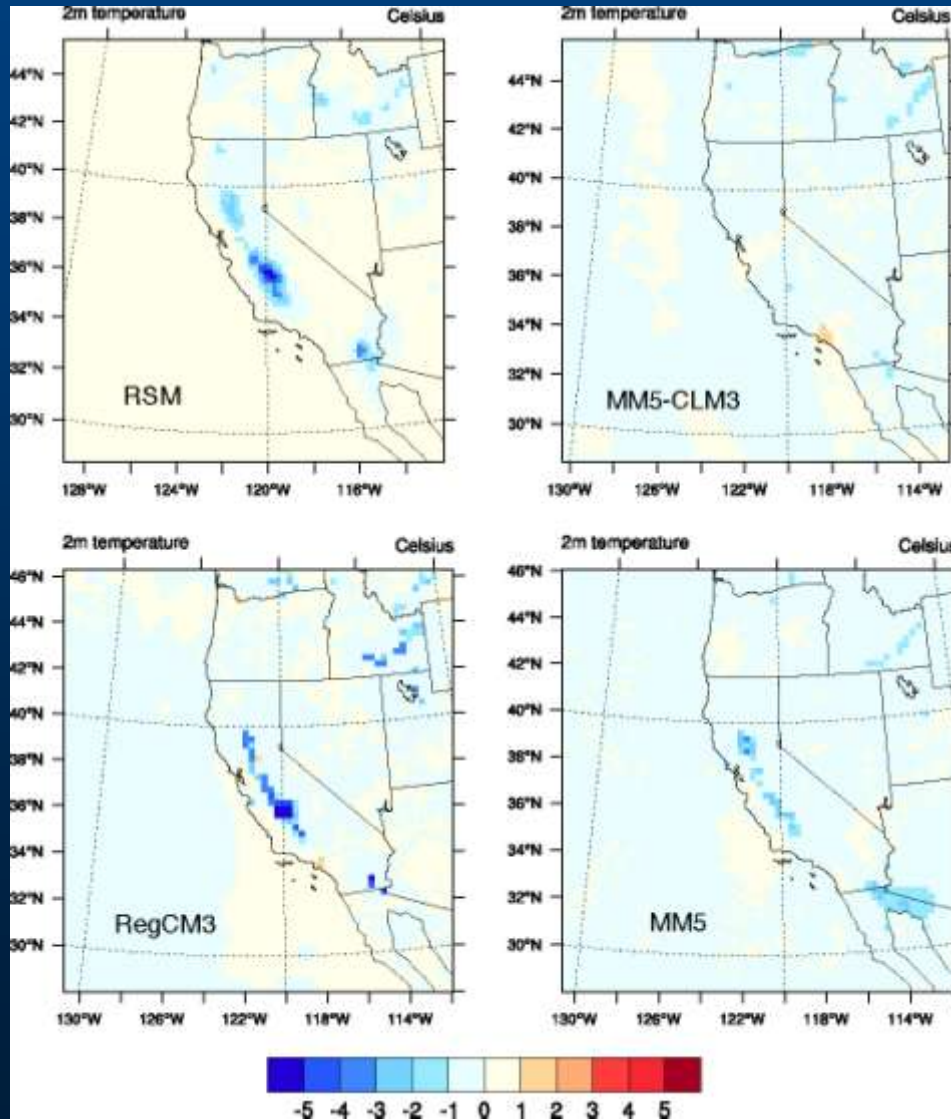
Modern and Natural Land Cover



Soil Moisture Differences

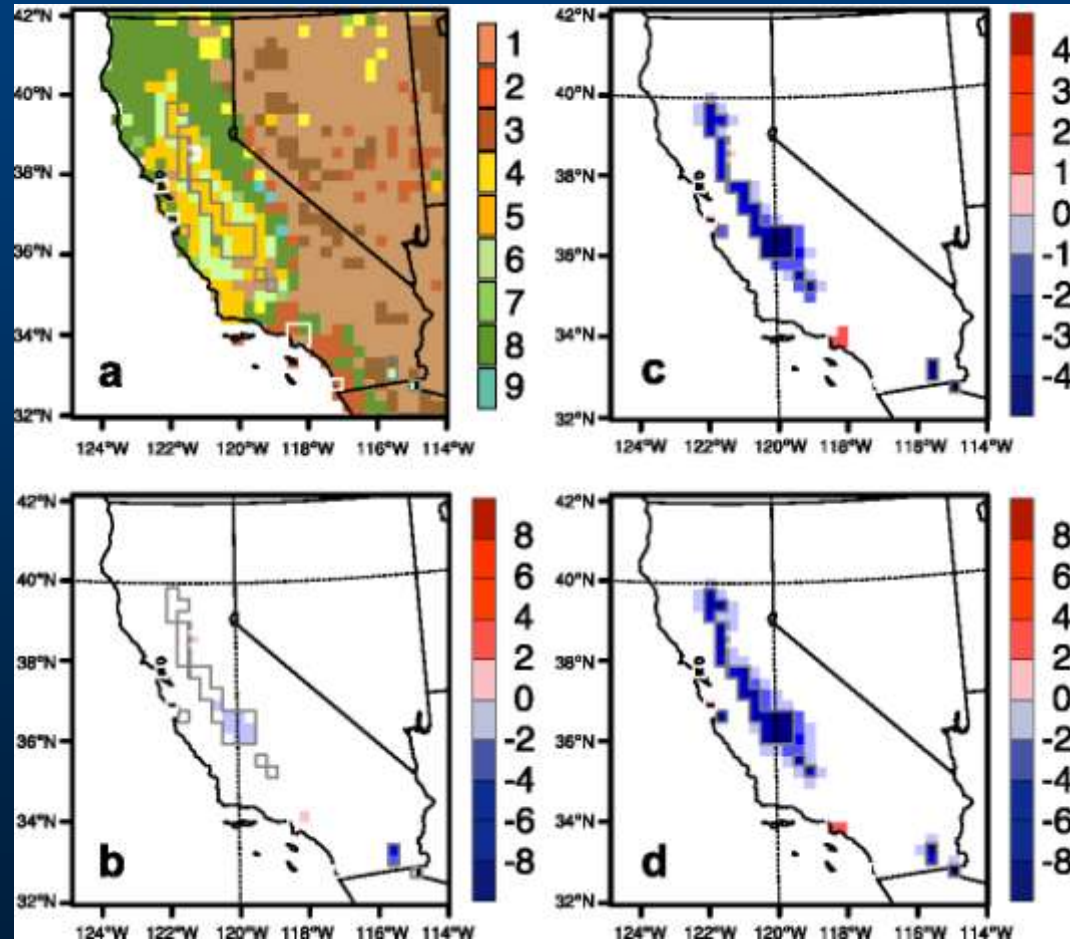


Surface Temperature Differences



Climate study of the Irrigation Cooling Effect with RegCM3

- Extension of CEC runs to 20 years in length
- Kueppers, Snyder, and Sloan 2007 GRL



Year to Year Variability

- Wet years and dry years identified
- Impact of irrigation in wet and dry years is nearly the same

