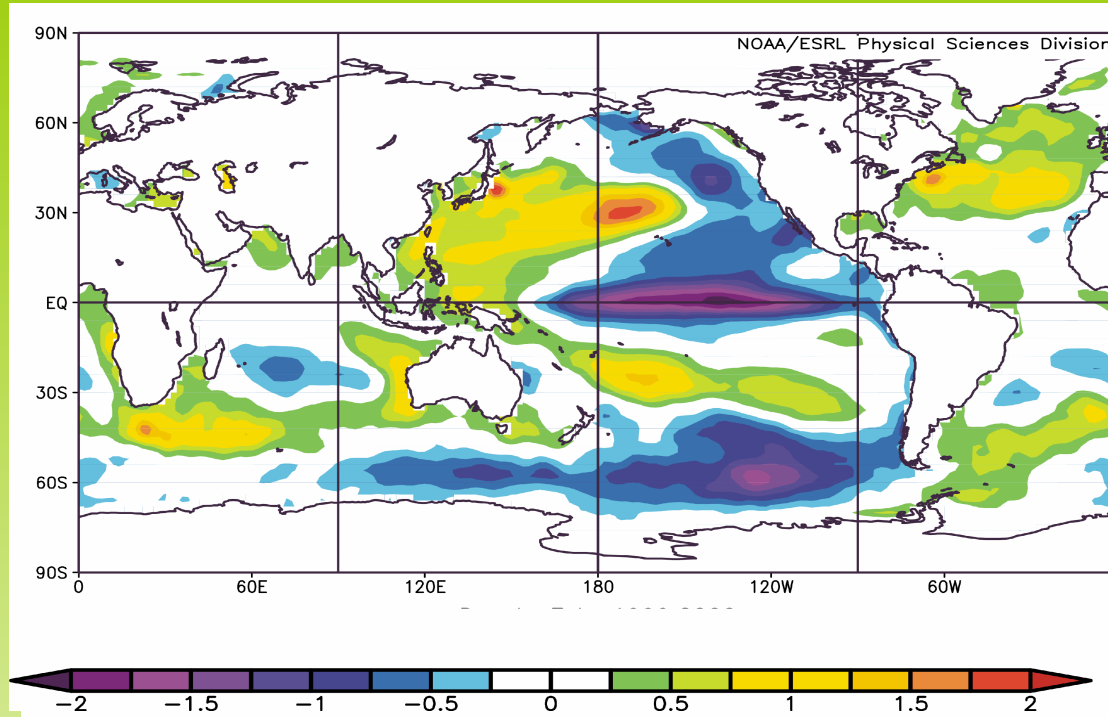


Circulation Control and Soil Moisture Variability during 1999-2003 Canadian Prairie Drought

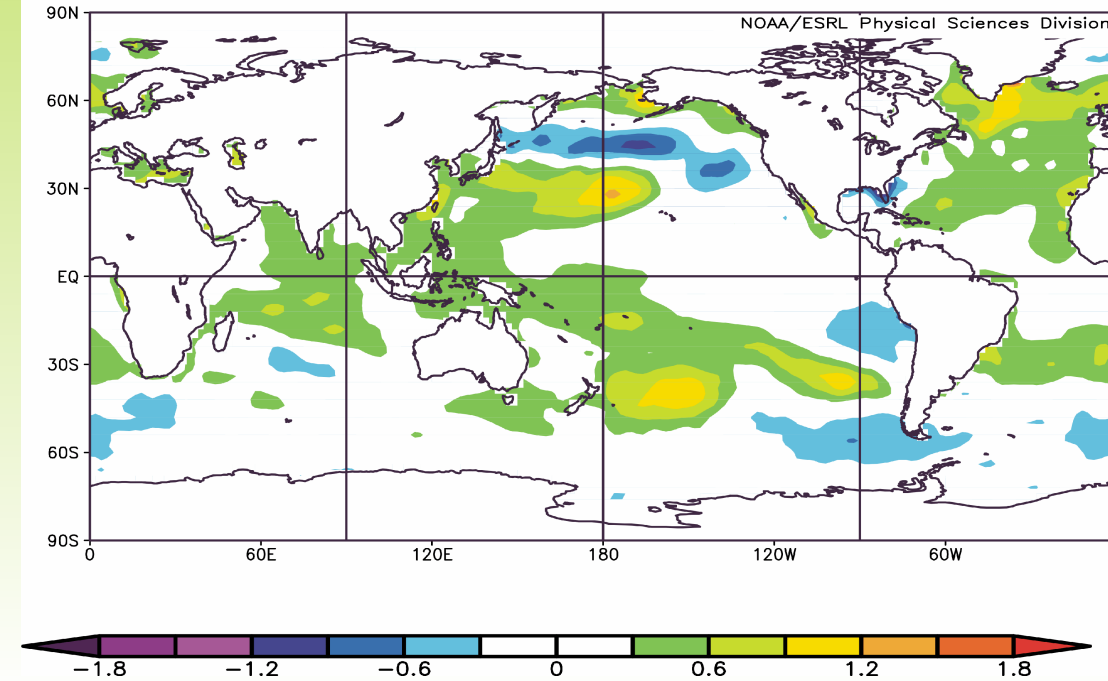
Amir Shabbar and Barrie Bonsal
Environment Canada

Sea Surface Temperature Anomaly (Dec – Feb)

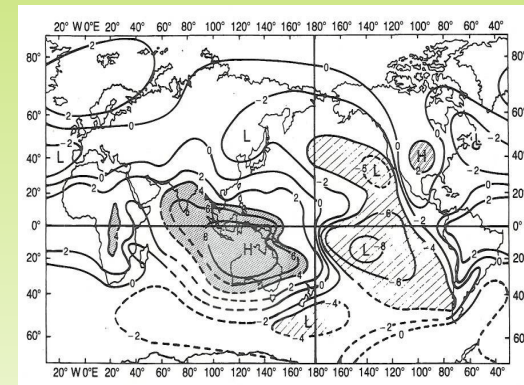
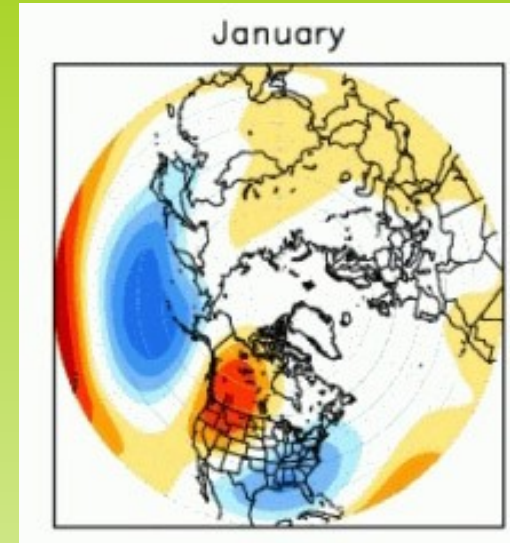
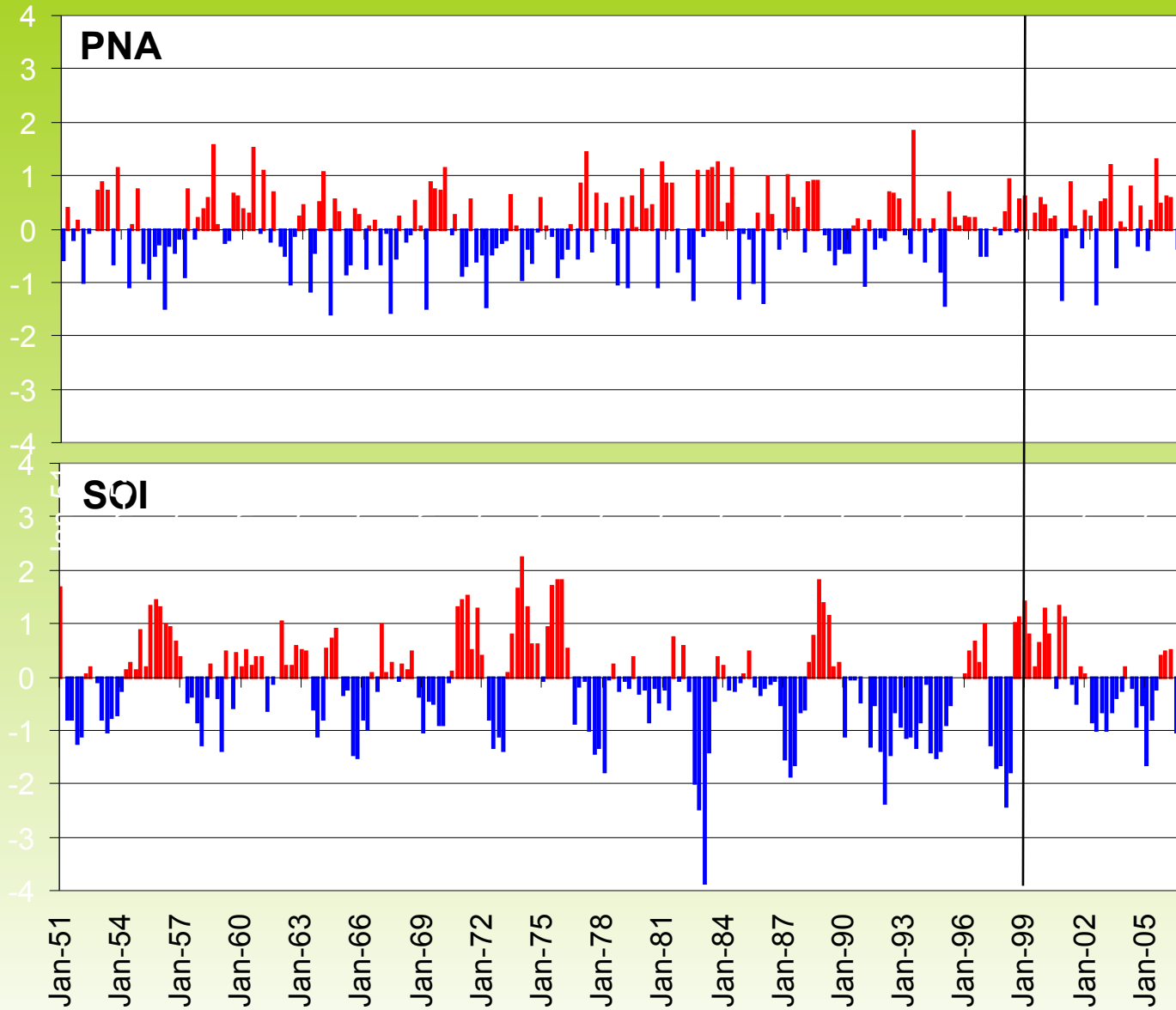
1999-2000



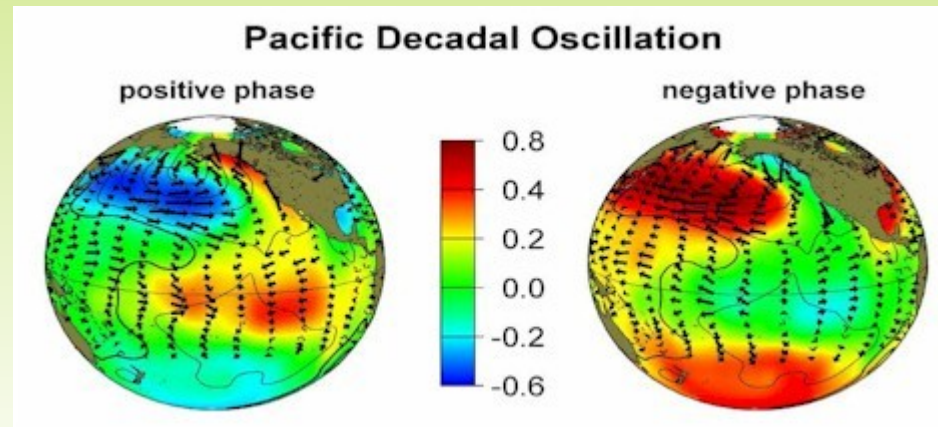
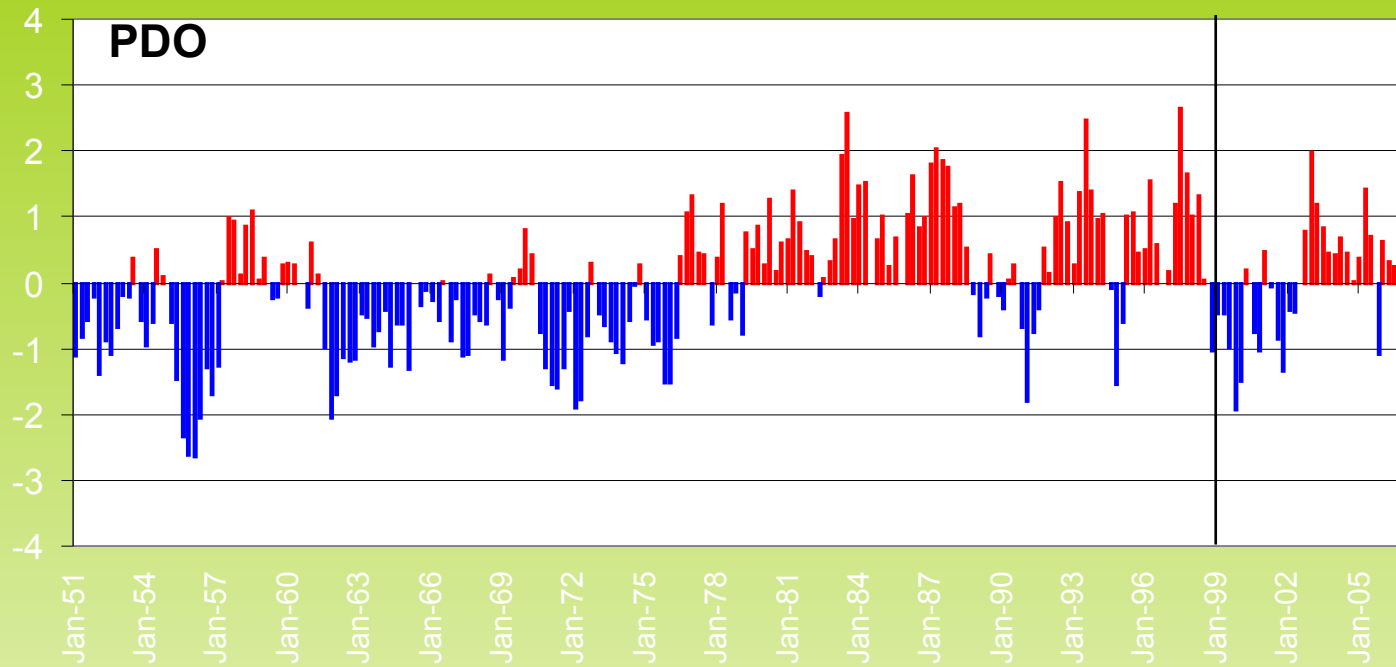
2001-2003



Teleconnection Indices

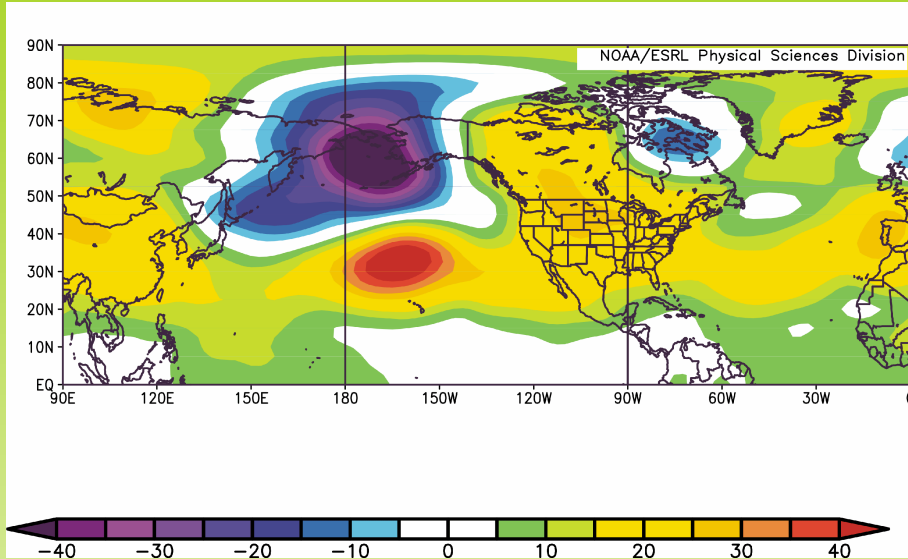


Teleconnection Indices

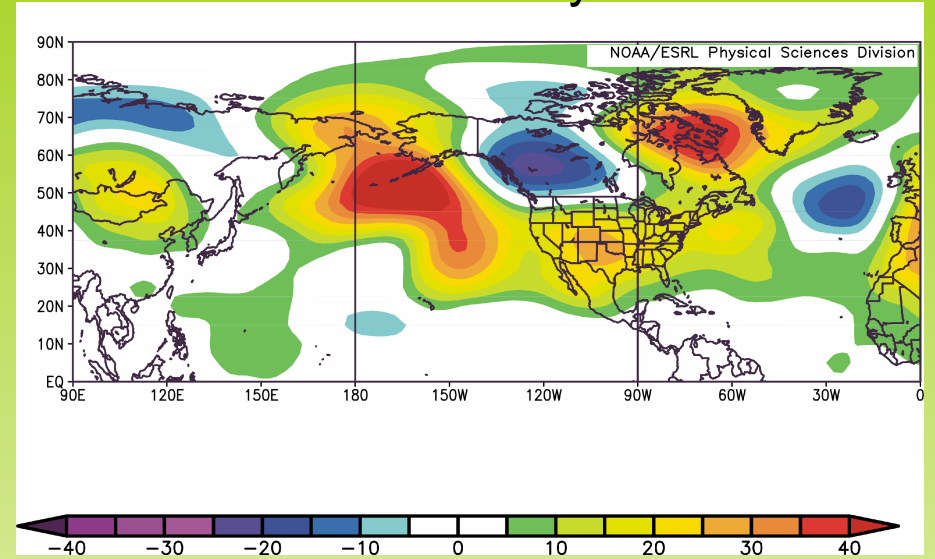


500 hPa Height Anomaly 1999-2003 Average

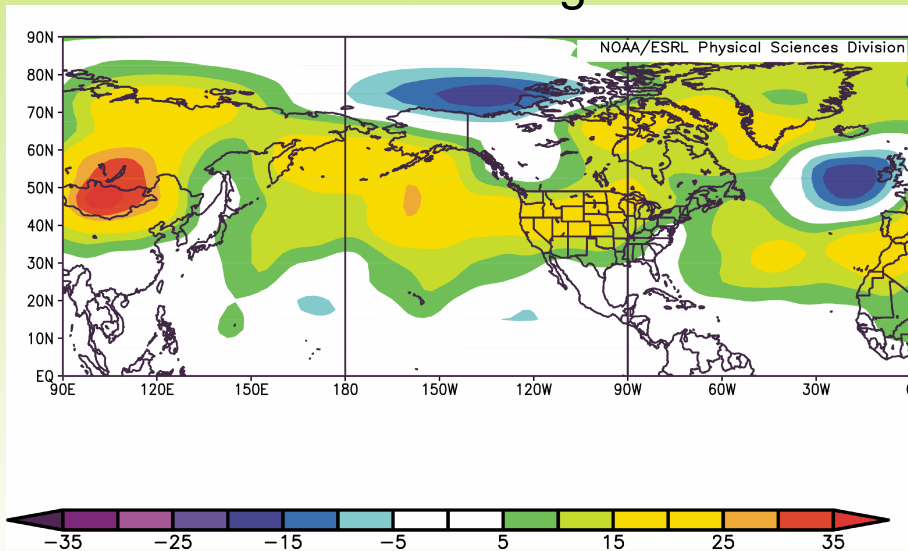
Dec-Feb



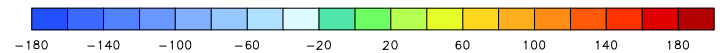
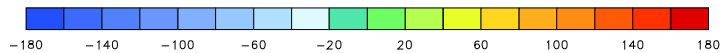
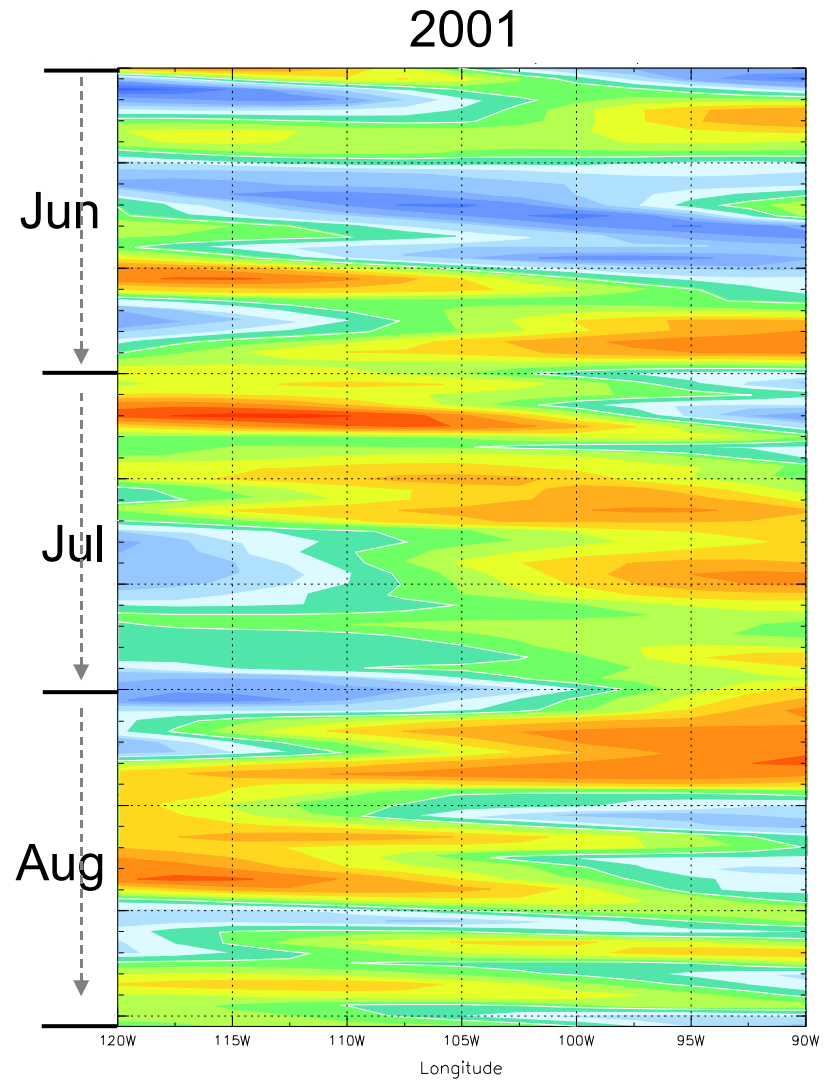
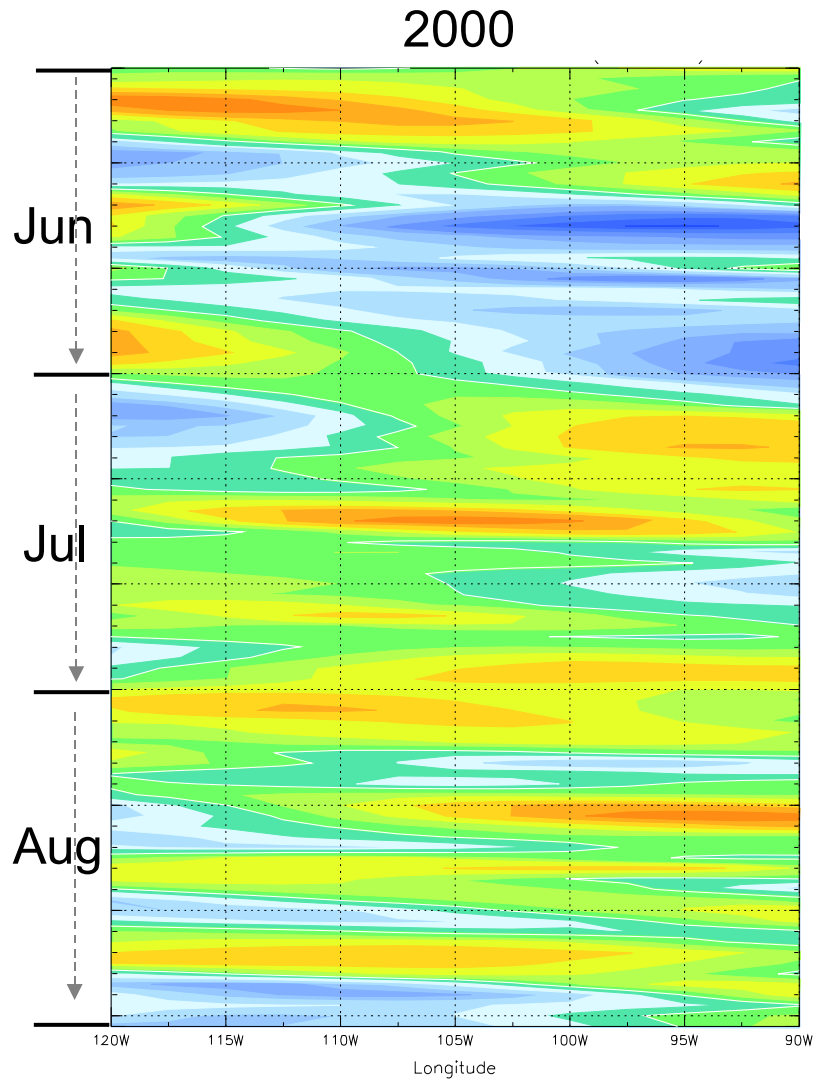
Mar-May



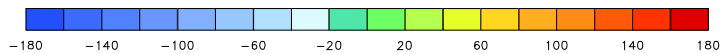
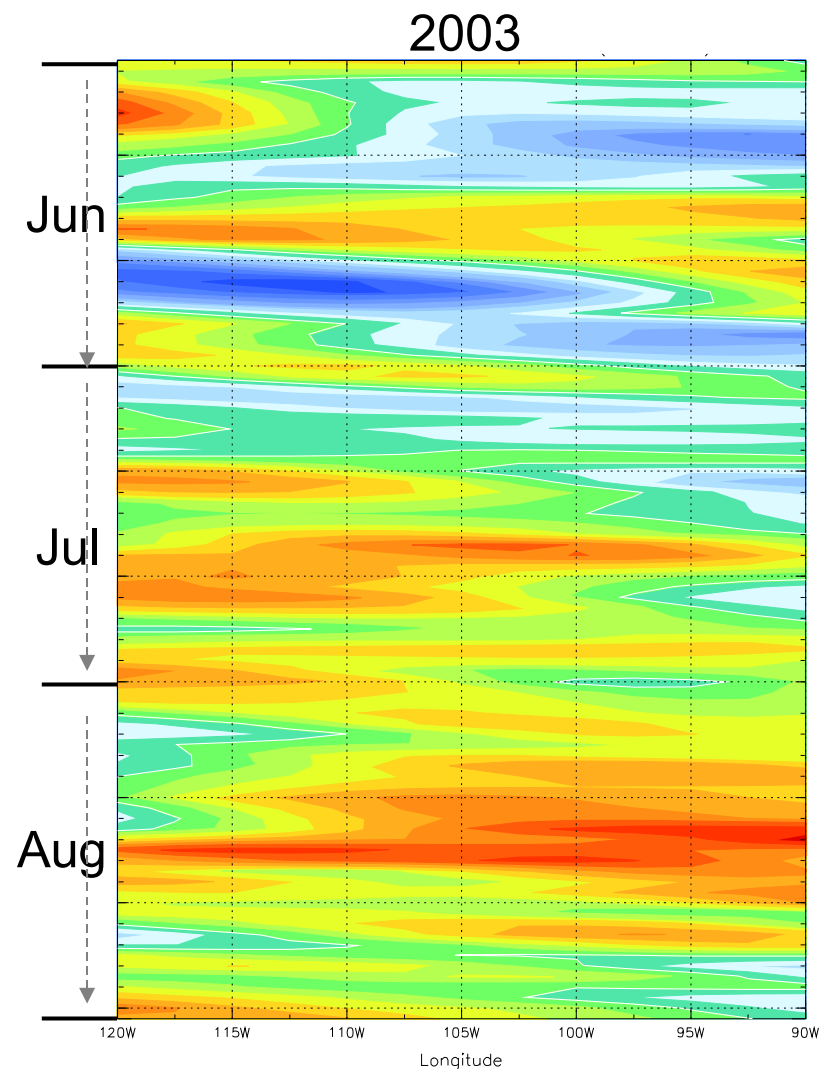
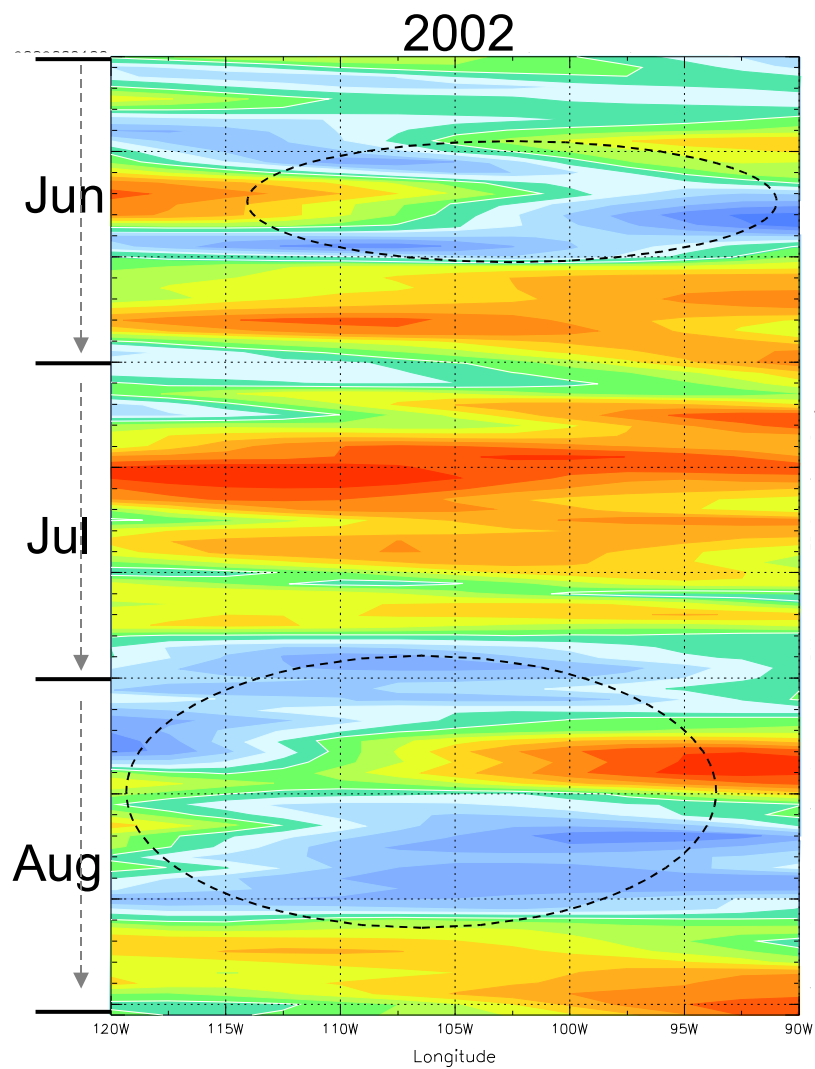
Jun-Aug



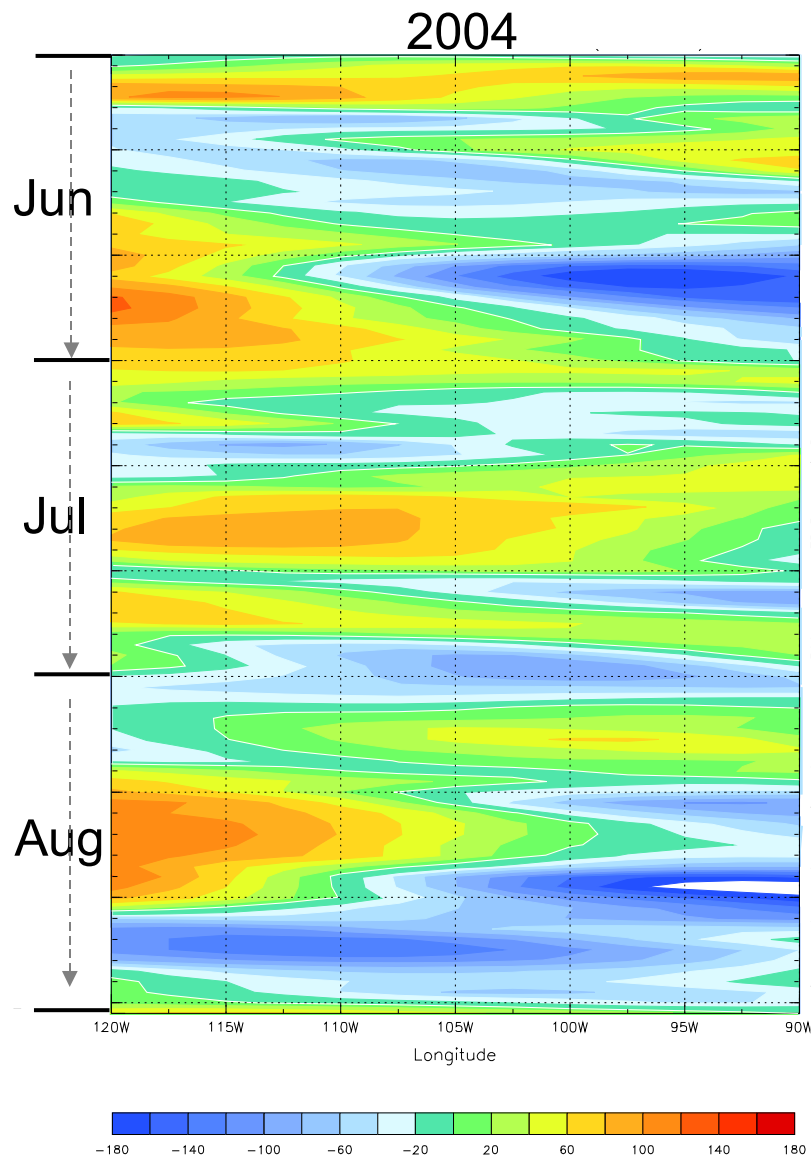
500 hPa Height Anomaly: Jun-Aug 40N-60N



500 hPa Height Anomaly: Jun-Aug 40N-60N

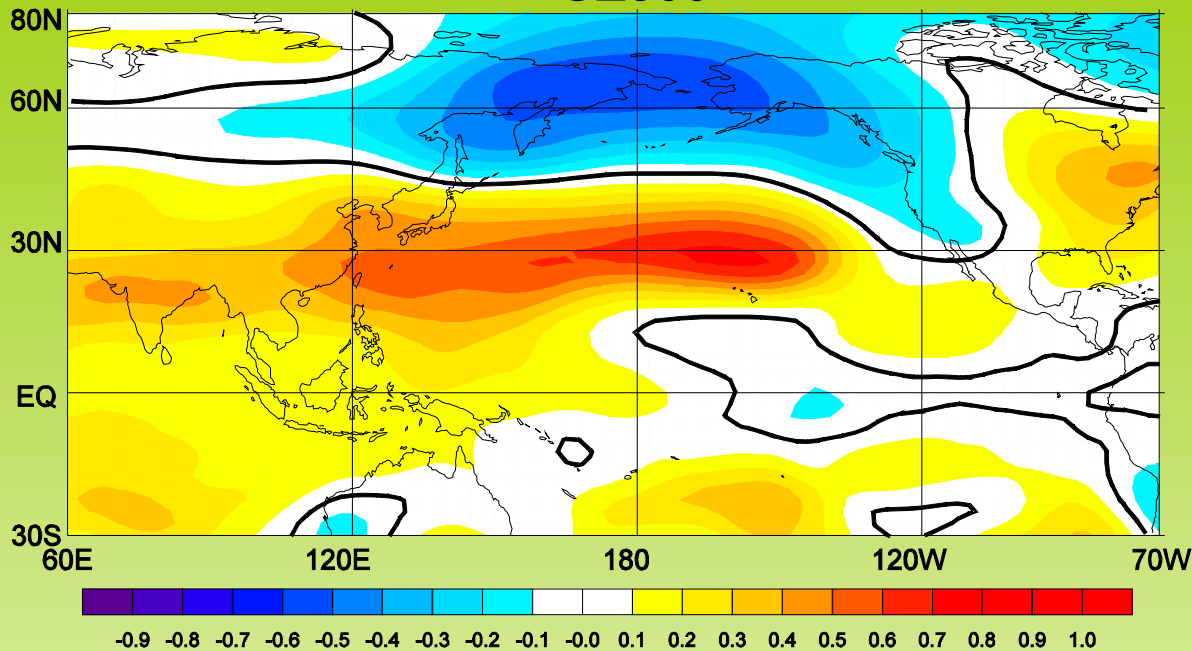


500 hPa Height Anomaly: Jun-Aug 40N-60N

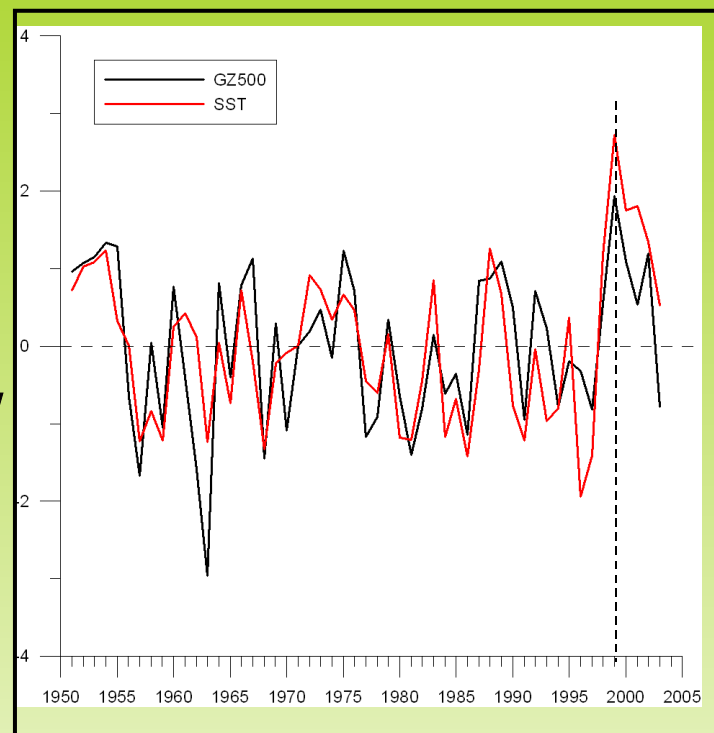


Maximum Covariance Analysis (2nd coupled mode of variability)

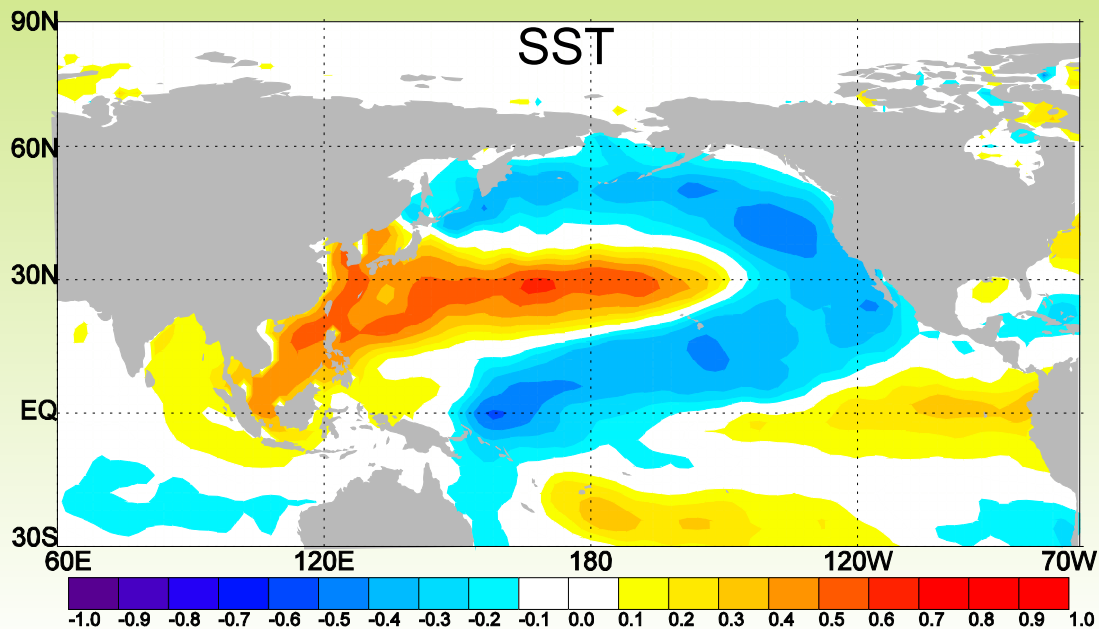
GZ500



Time Series: SVT2



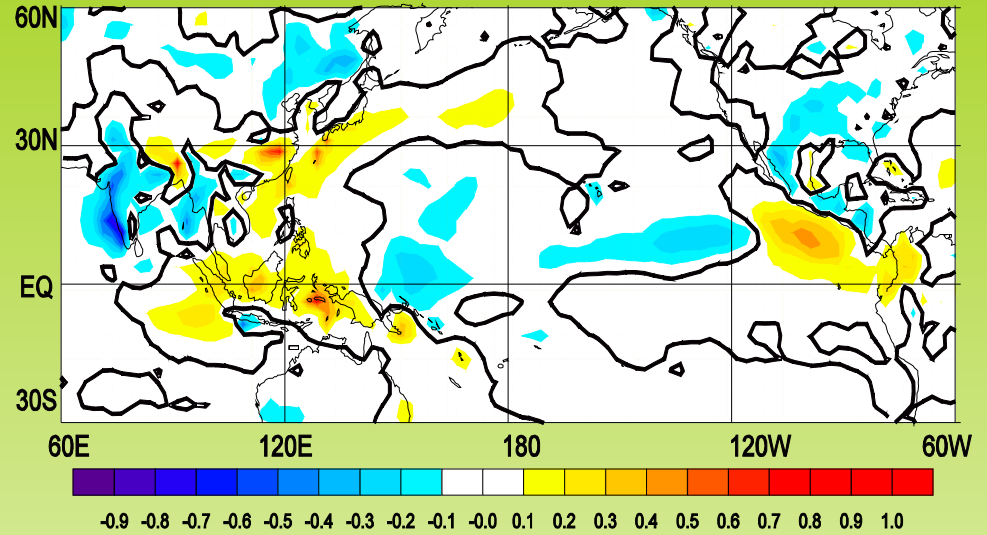
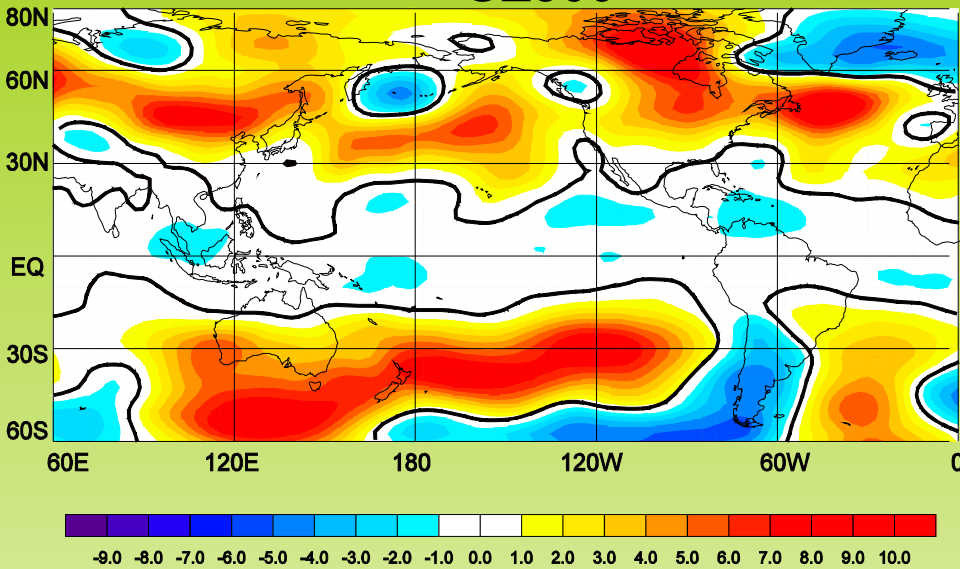
SST



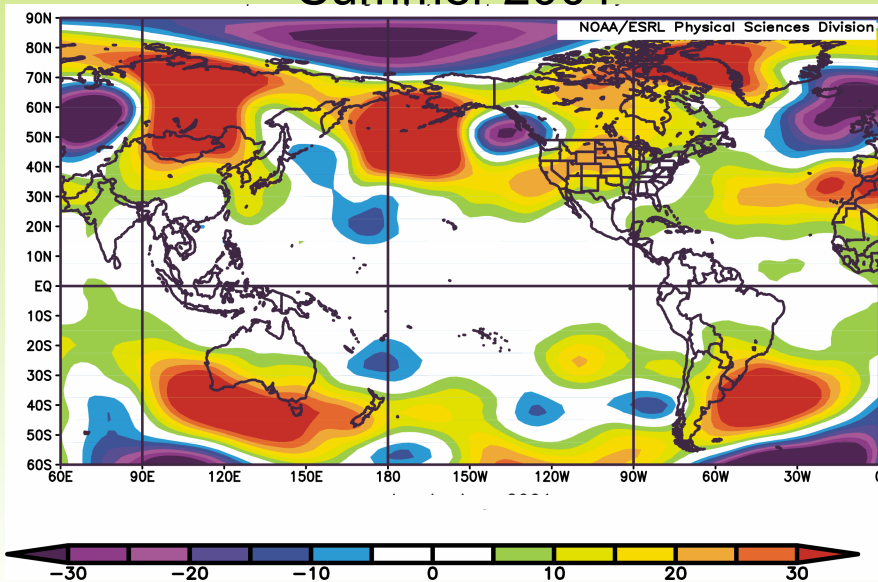
Following Summer 500 hPa Heights and Precipitation Regressed onto Winter SVT2_SST

GZ500

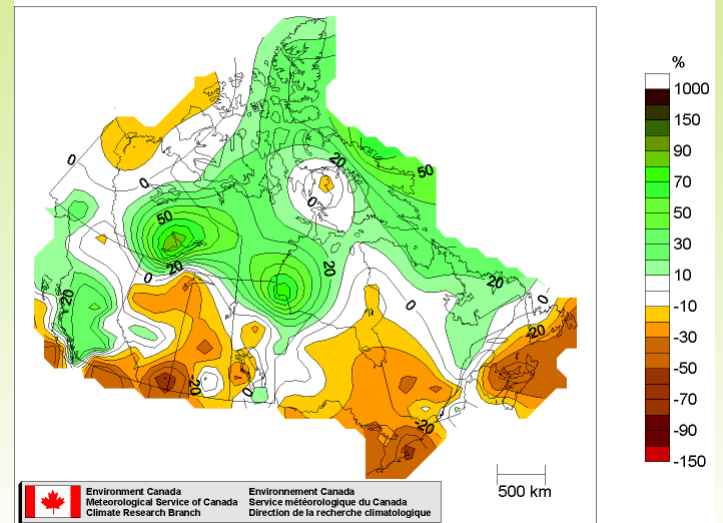
Precip



Summer 2001



Summer/Été (Jun, Jul, Aug) 2001



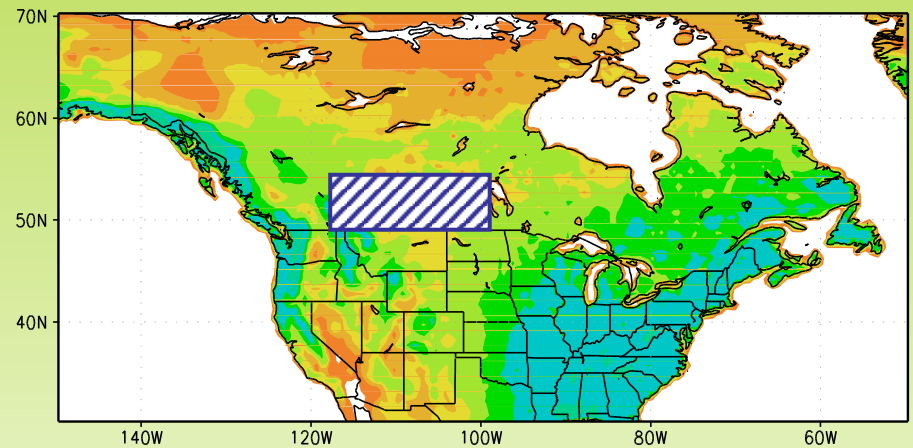
Soil Moisture Variability (1999-2003)

Soil Moisture Model
(1.6 m 1-layer bucket)

$$\frac{dw}{dt} = P - E - R$$

Climatology April-September (1979-2007)

- W = soil moisture
- P = precipitation
- E = evaporation (thornthwaite)
- R = runoff
- E and R are parameterized



Area-Average Soil Moisture Anomaly (120W-95W, 49N-55N)

