

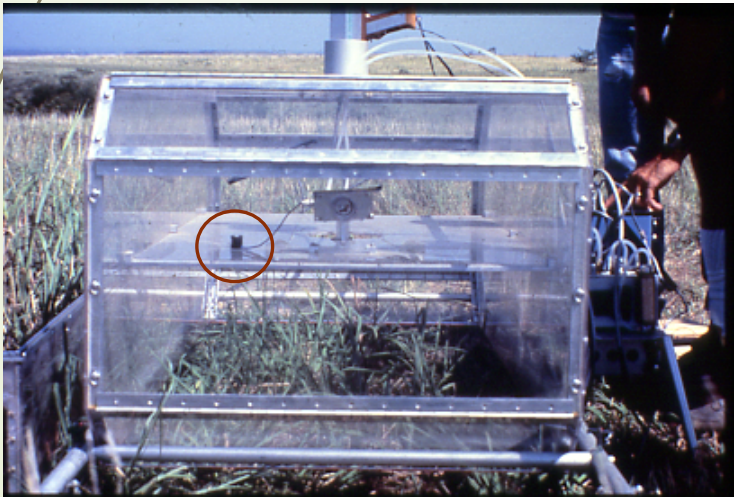
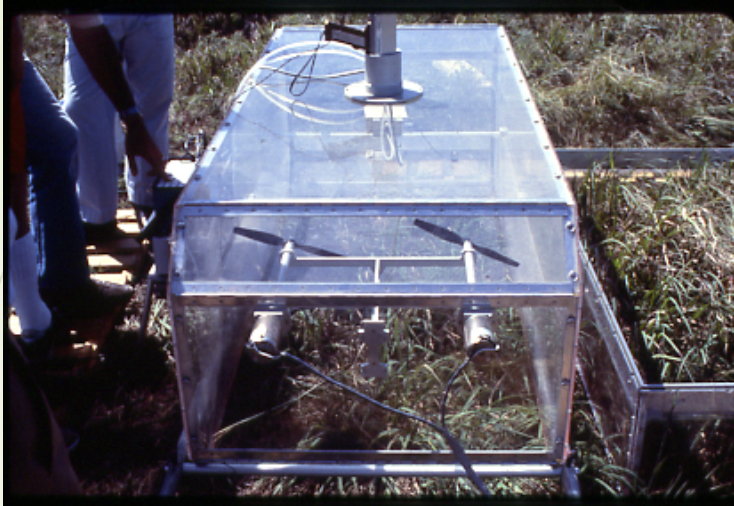


# FIFE-BOREAS Reunion: Some Reflections

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- ▶ University of Wisconsin, Madison
  
- ▶ GSFC, Greenbelt Maryland
- ▶ October 6-7, 2016
  
- ▶ Email: [jmnorman@wisc.edu](mailto:jmnorman@wisc.edu)

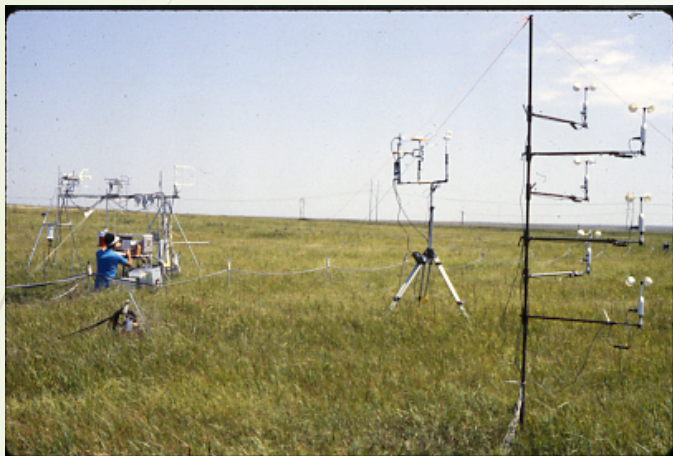
# Piers' Chamber Delight

But I never saw him with it in the field, Modelers!

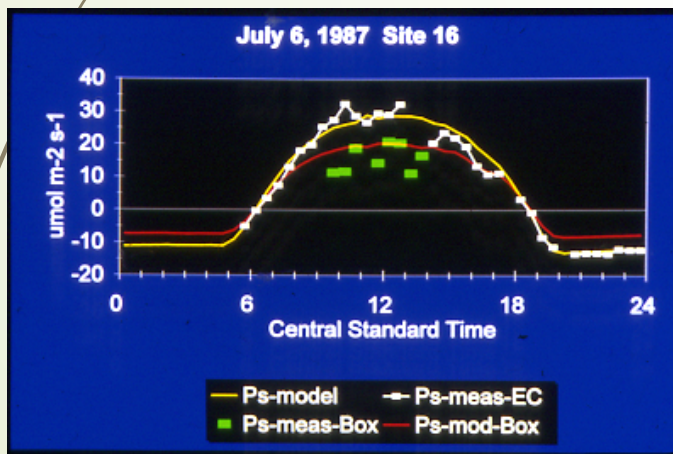
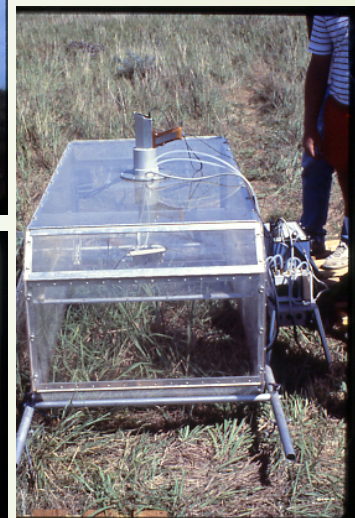




# Eddy Covariance – The Holy Grail



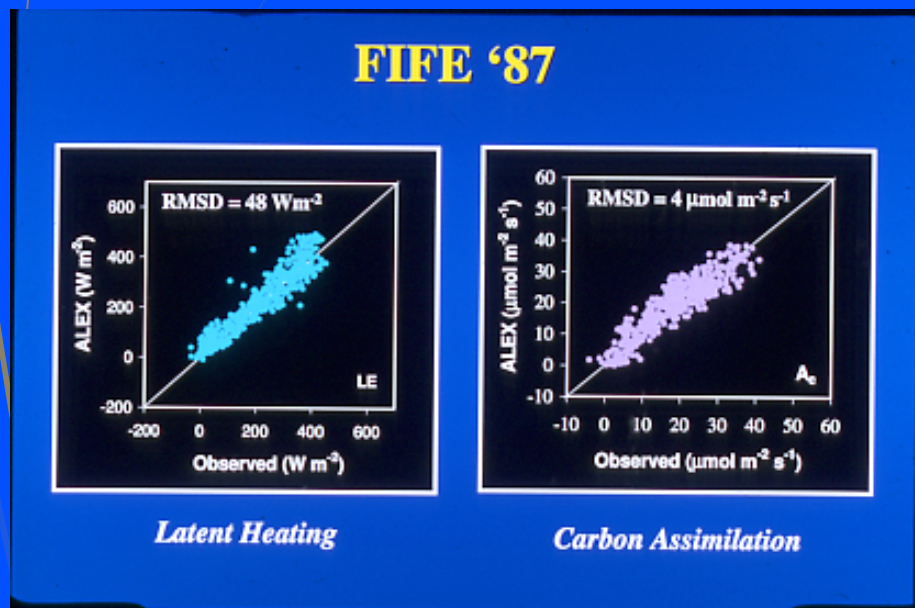
Of Course Chambers Up The Wazoo



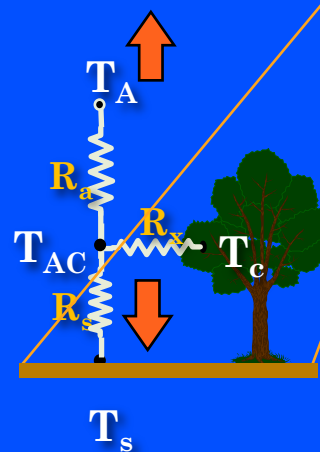
# The Bottom Line: Better Models For Satellite Mapping

## ALEX-Inverse (ALEXI)

5km fluxes across the US

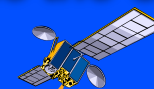


$\Delta T_A \rightarrow \langle H \rangle$   
Boundary Layer Model:



**Surface Layer Model:**  
(ALEX Model)

$\Delta T_{RAD} \rightarrow \langle H \rangle$



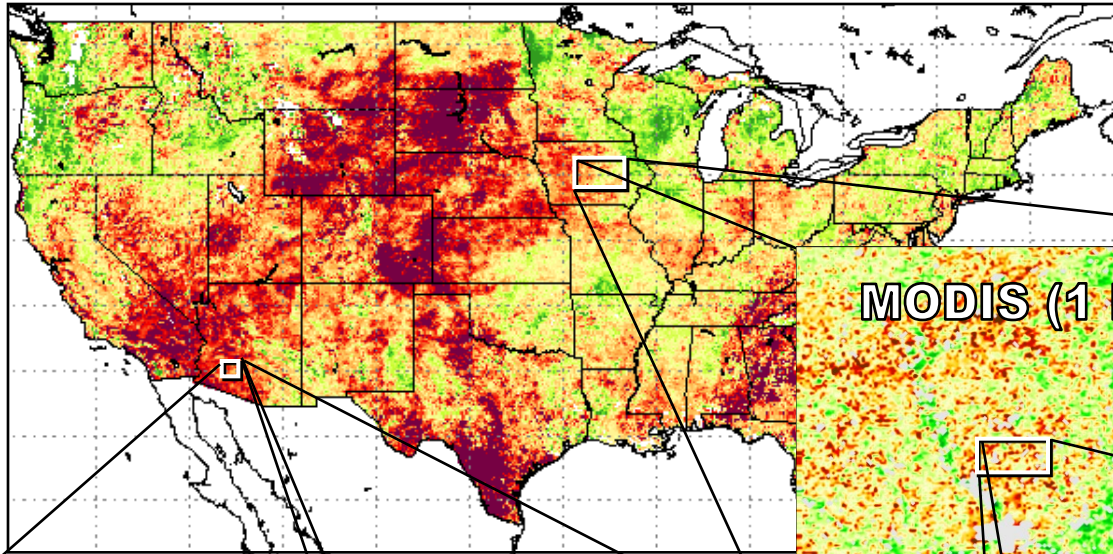
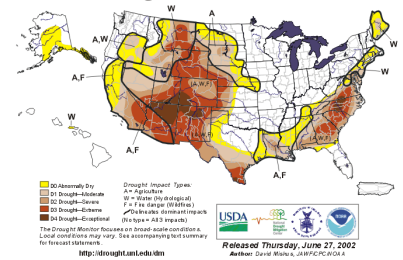


# Multi-scale Drought Monitoring

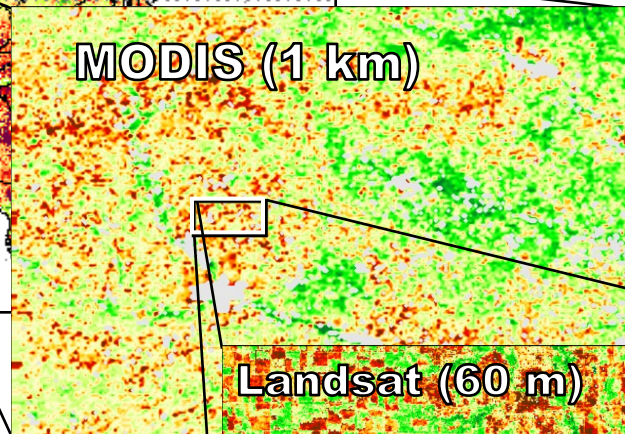
## GOES Evaporative Stress Index

### JUNE 2002

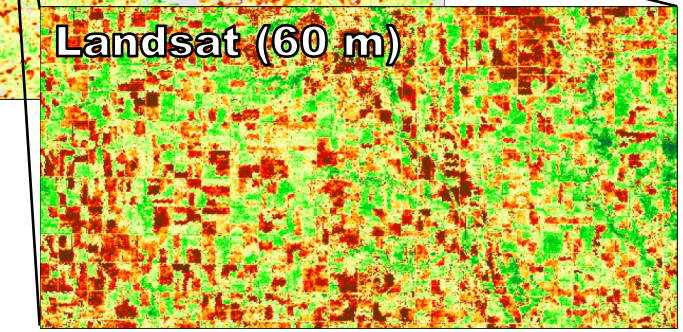
U.S. Drought Monitor June 25, 2002



MODIS (1 km)

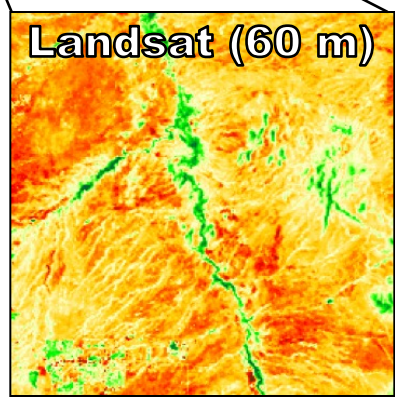
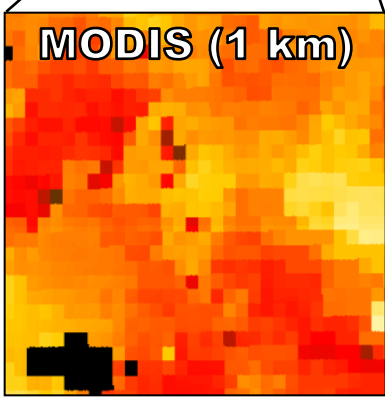


Landsat (60 m)



MODIS (1 km)

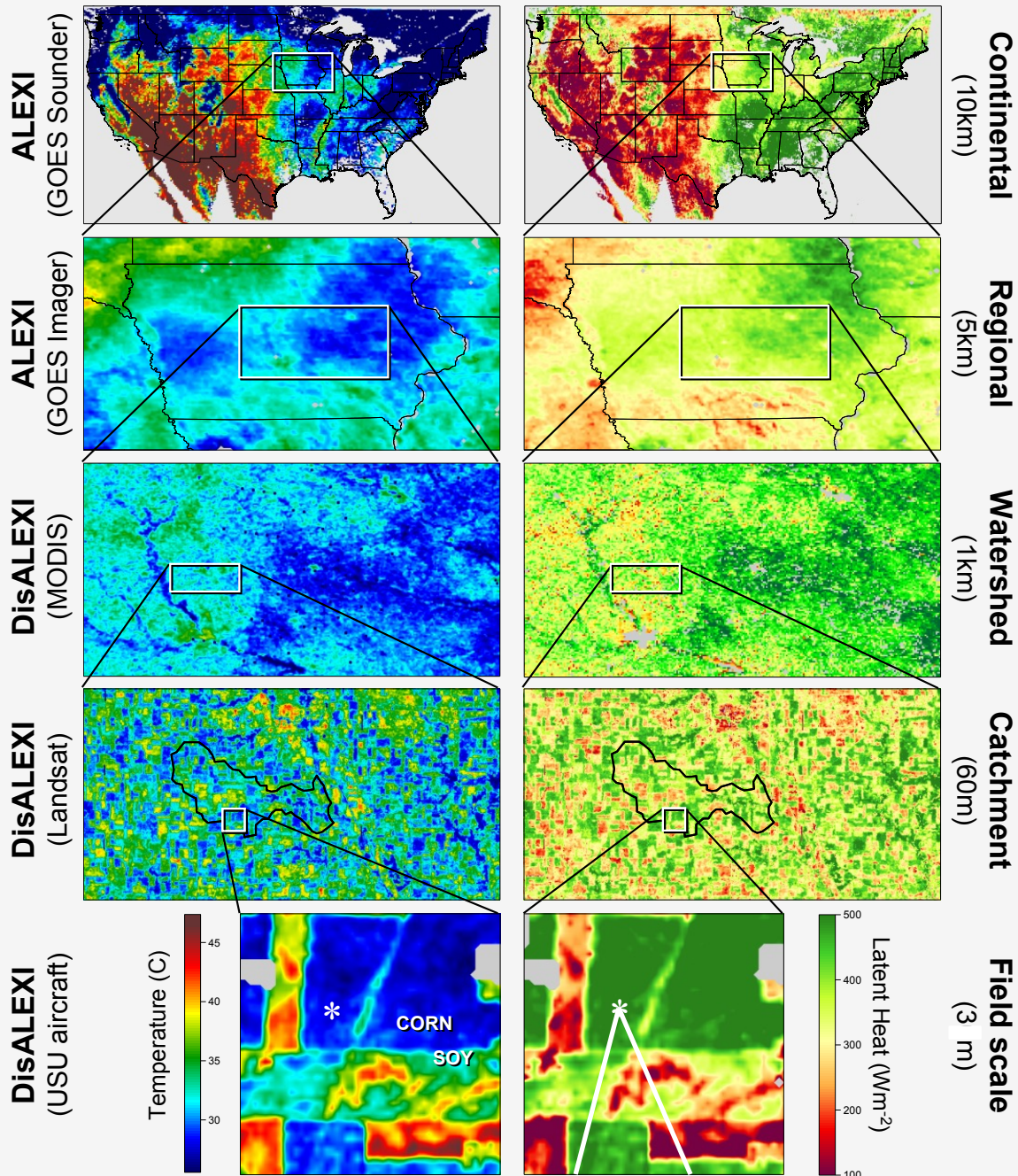
Landsat (60 m)





# SURFACE TEMPERATURE

# EVAPOTRANSPIRATION



1 July 2002 – 10:30AM CST

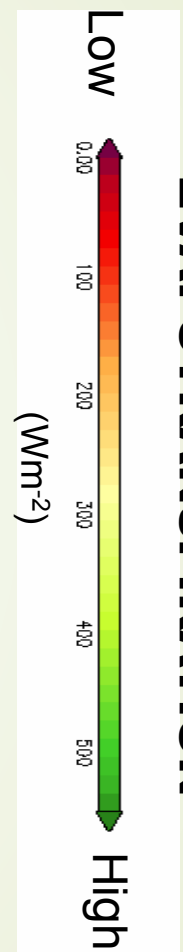
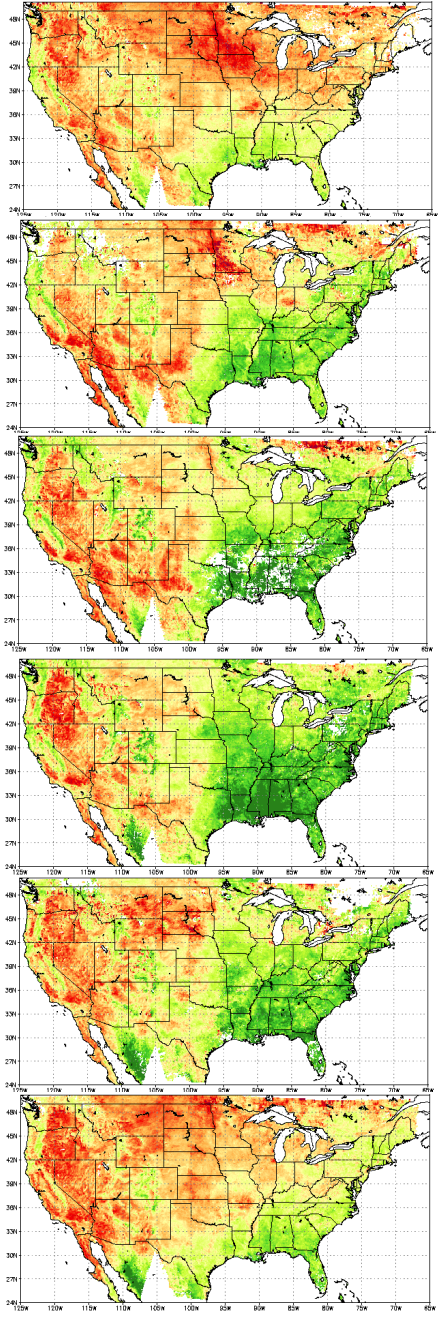
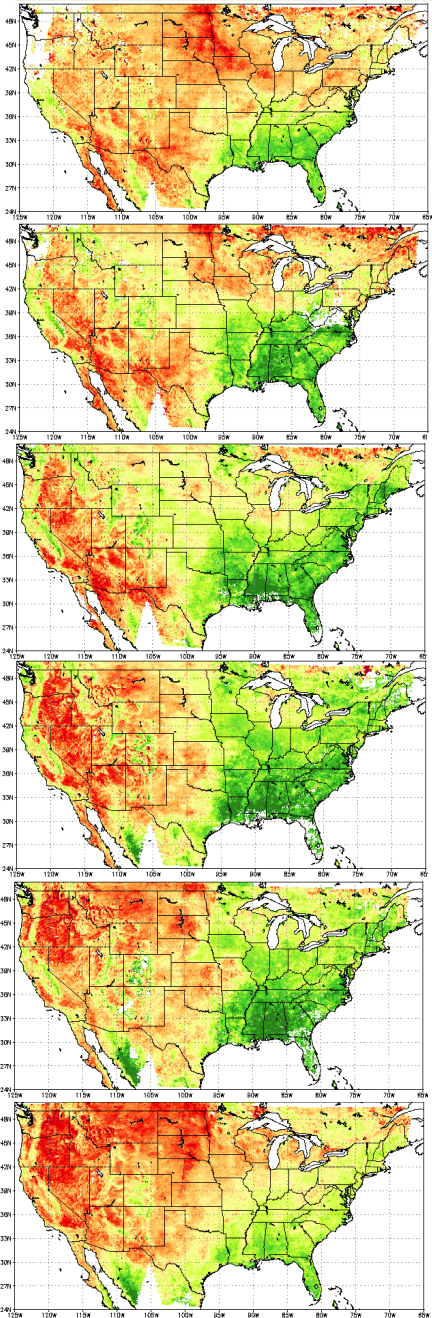
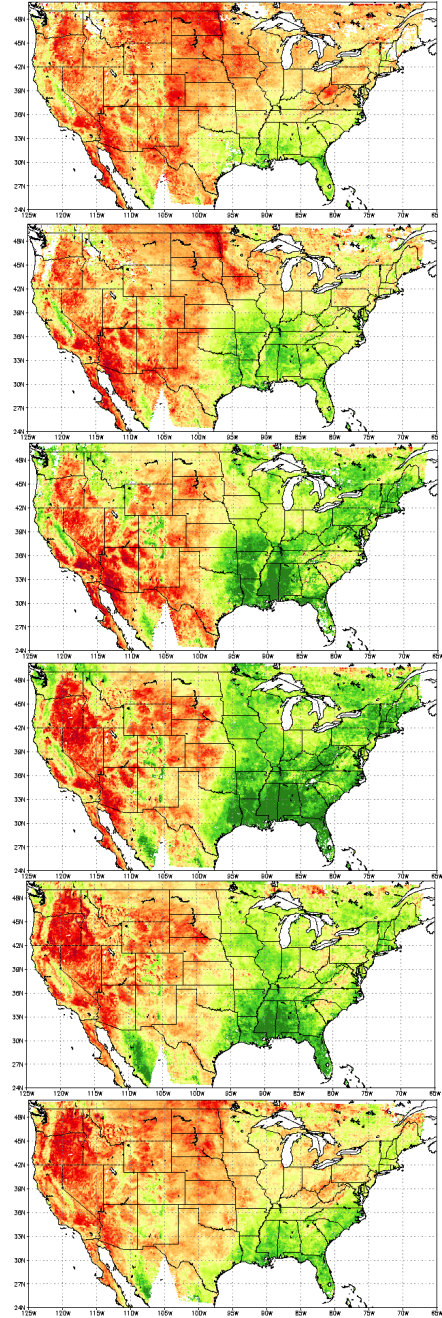


2002

2003

2004

APR  
MAY  
JUN  
JUL  
AUG  
SEP

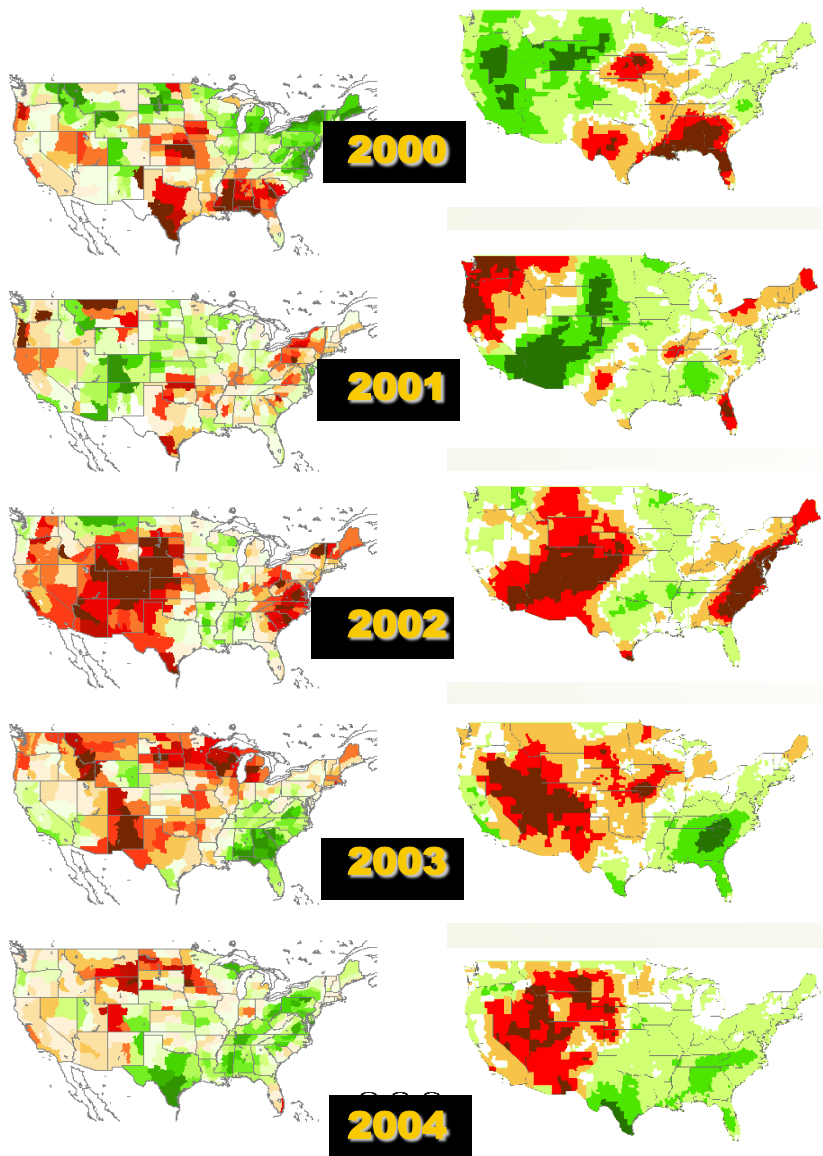


**EVAPOTRANSPIRATION**

(Anderson et al, 2007)

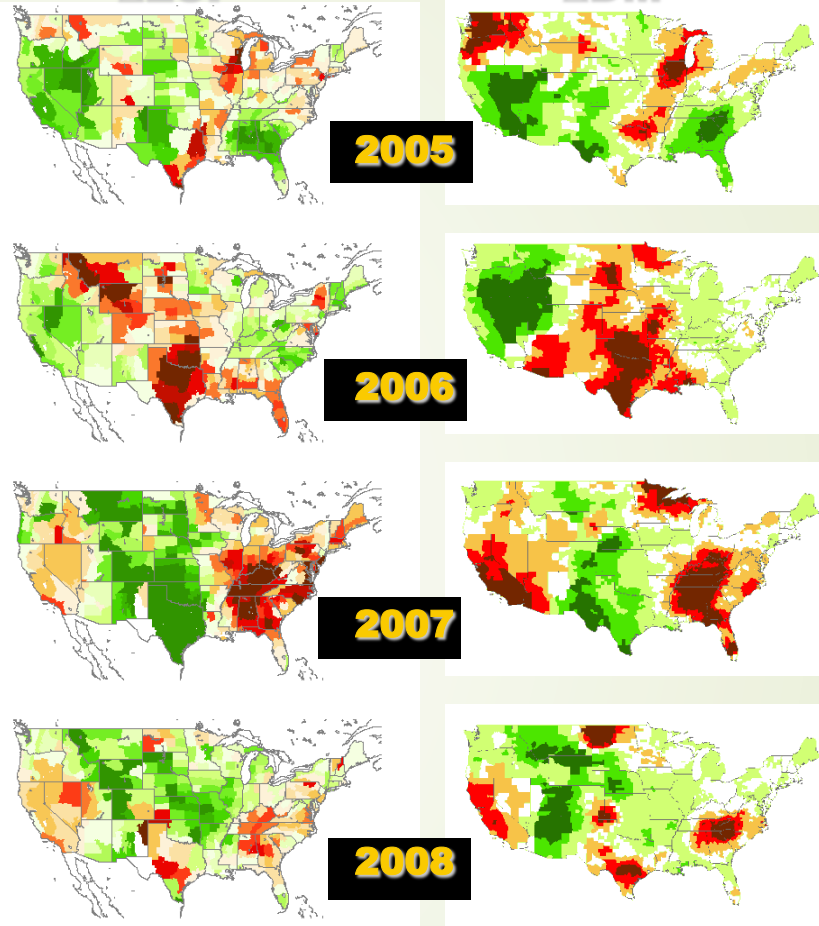
$\Delta$ ESI

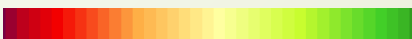
$\Delta$ DM



$\Delta$ ESI

$\Delta$ DM



Drier  Wetter

**SEASONAL ANOMALIES**  
April - September



An experience I would not change for the world

