SYNTHESIS ACTIVITY: LAND-WATER COUPLING

"we need to say something important……."

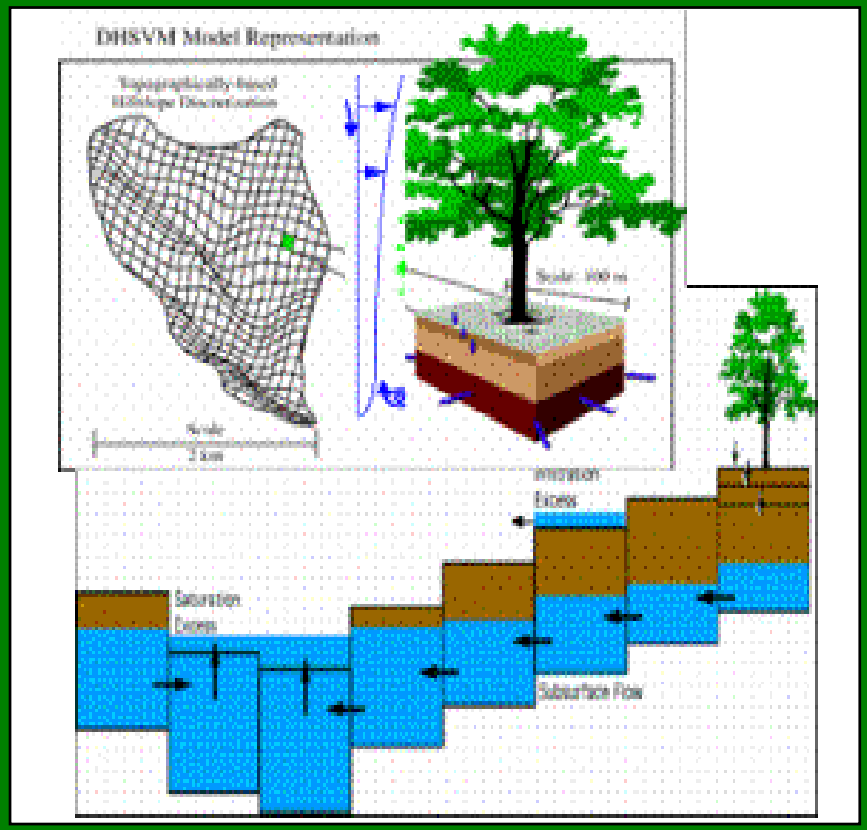
How do composite processes of land-water interactions scale up to generate regional patterns?

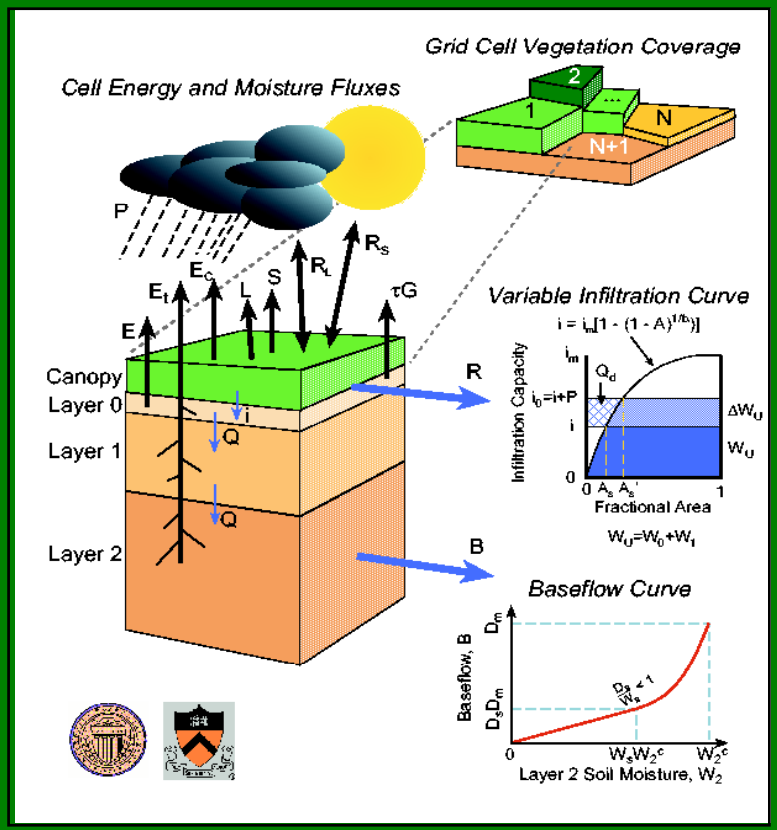
What is the size and character of the riverine carbon pool and the timing of its mobilization compared to net atmosphere-land carbon uptake? (and what are the factors controlling the partitioning of carbon between evasion and fluvial export?).

What do these regional patterns in carbon transport and transformation indicate about the overall relation among water movement, landscape structure (topography, soils), and vegetation structure and productivity across the Amazon basin?

What are the effects of climate variability and human forcing on fluvial carbon mobilization?

CAN (GEOSPATIAL) HYDROLOGY MODELS "HELP" CONSTRAIN REGIONAL HYDROMET & NPP MODELS

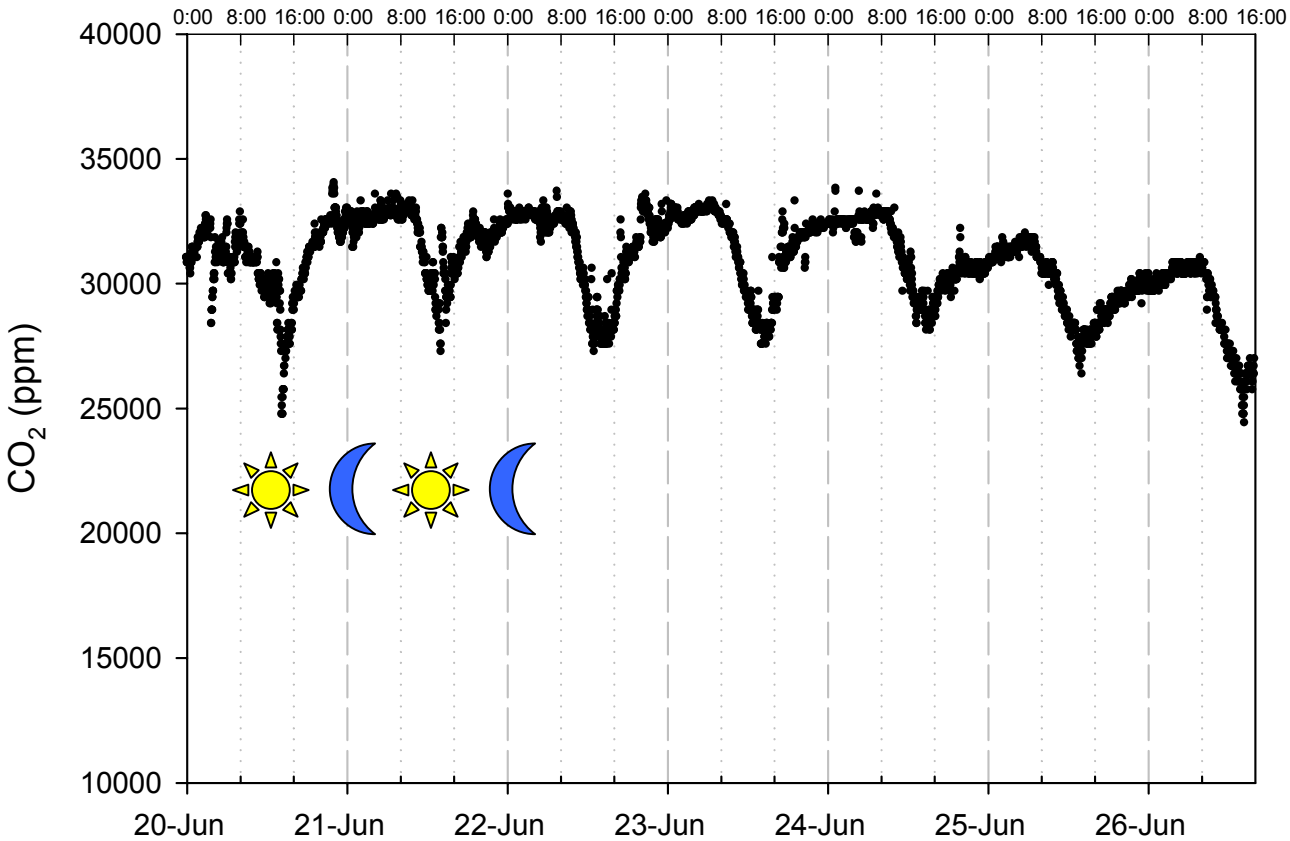




Sources of CO_2

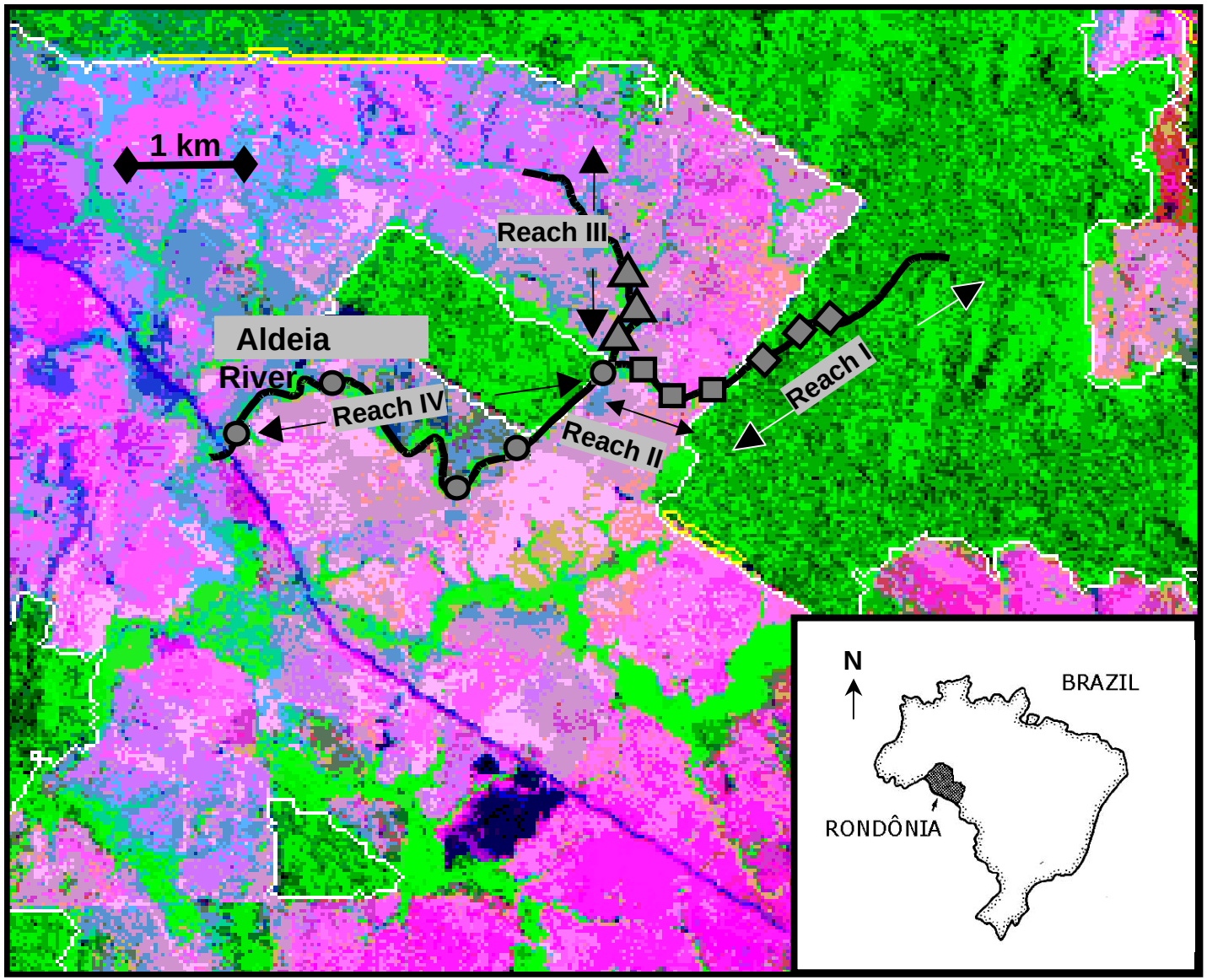
UFMT/Cornell (J. Lehmann, M. Johnson, E. Couto, S. Riha, L. Rodrigues, M. Abdo, E. Selva, and E. Fernandes

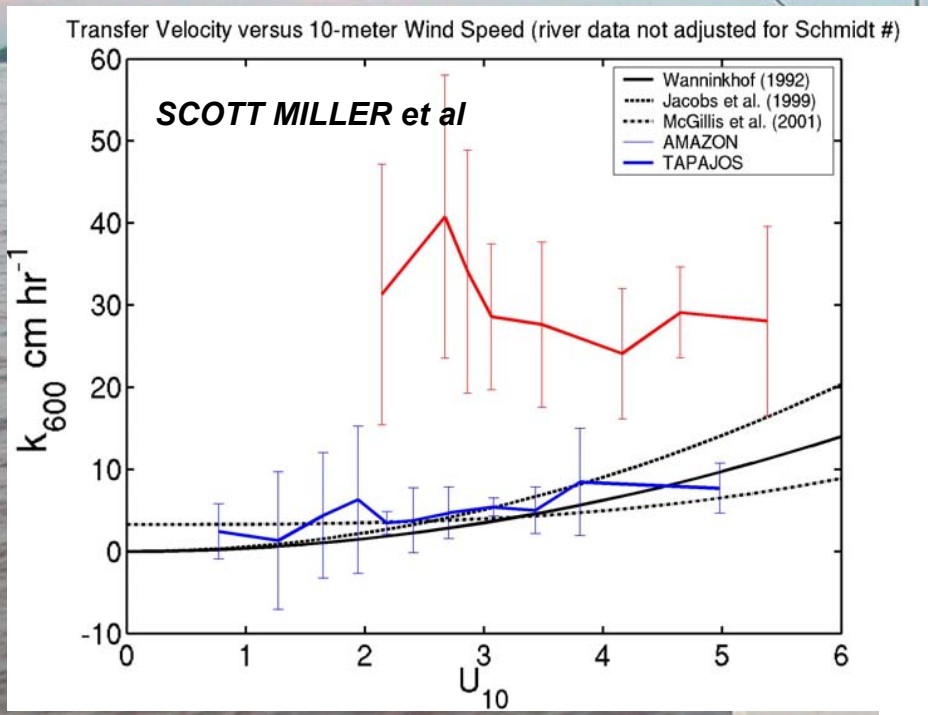
Diurnal fluctuation of CO_2 in groundwater seep

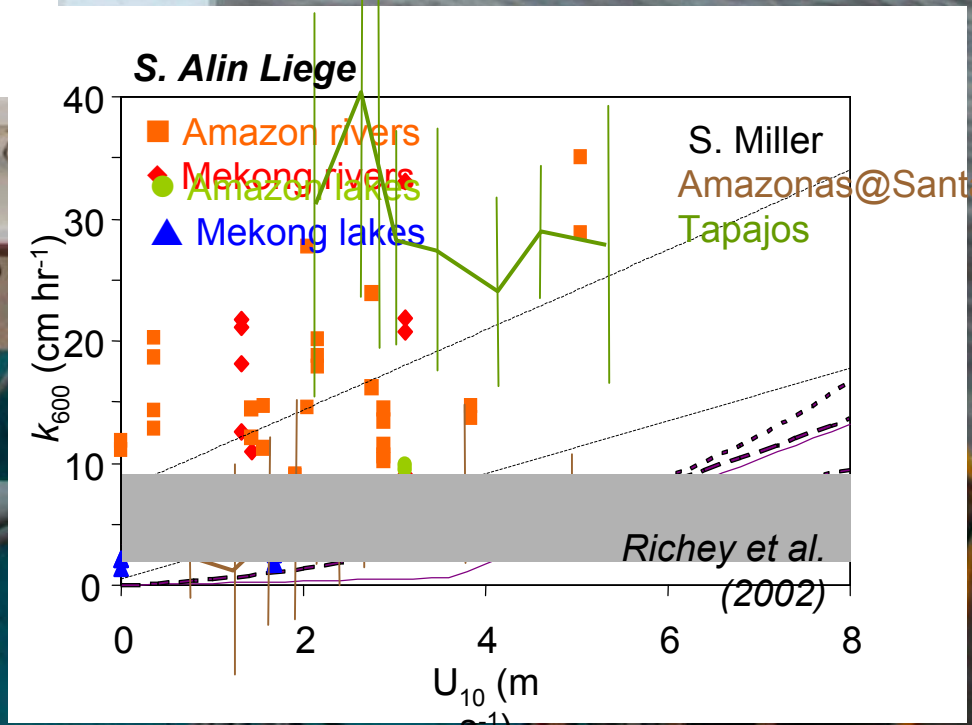


Forested Ultisol
Southern Amazon, Juruena, MT

STREAM "SCALING"

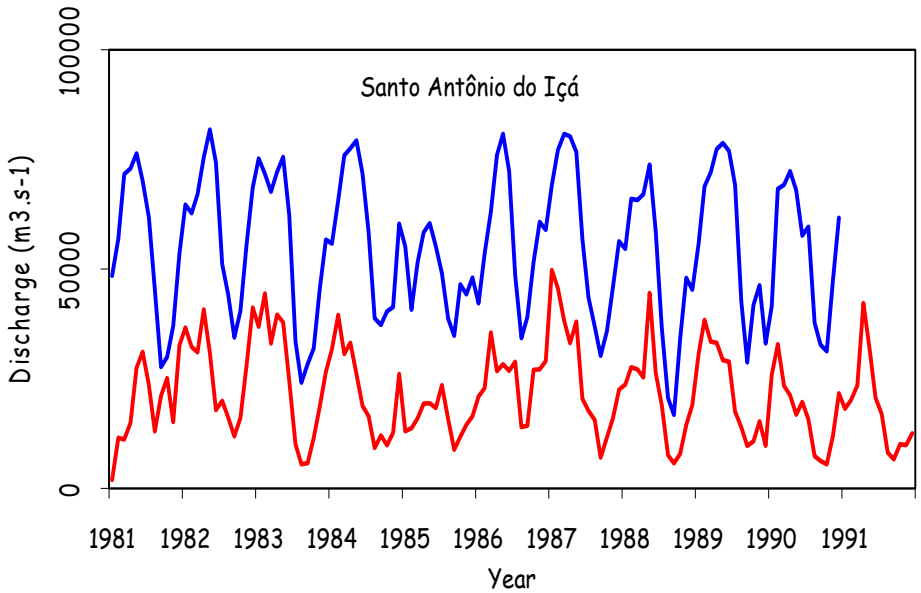


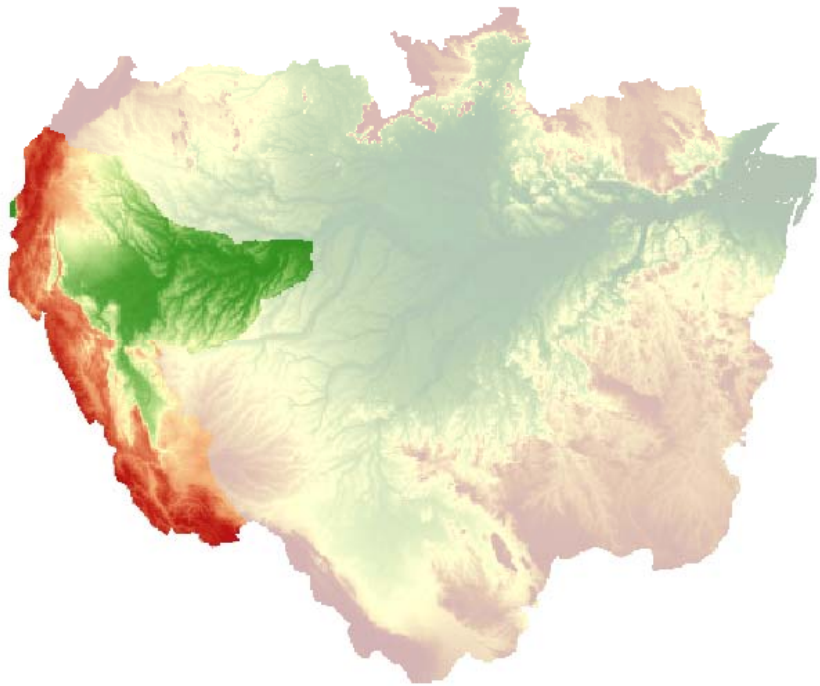

Transfer Velocity versus 10-meter Wind Speed (river data not adjusted for Schmidt #)
SCOTT MILLER et al
Wanninkhof (1992)
Jacobs et al. (1999)
McGillis et al. (2001)
AMAZON
TAPAJOS
k600 cm hr-1
U10


S. Alin Liege
Amazon rivers
Mekong rivers
Amazon lakes
Mekong lakes
S. Miller
Amazonas@Santare
Tapajos
Richey et al.
(2002)
k600 (cm hr-1)
U10 (m s-1)


COUPLING LARGE WETLANDS TO OVERALL
BASIN HYDRO GEOCHEMISTRY

COUPLE WITH HYDROMET CROWD
(AND RESOLVE DATA GAPS AND FORCING)



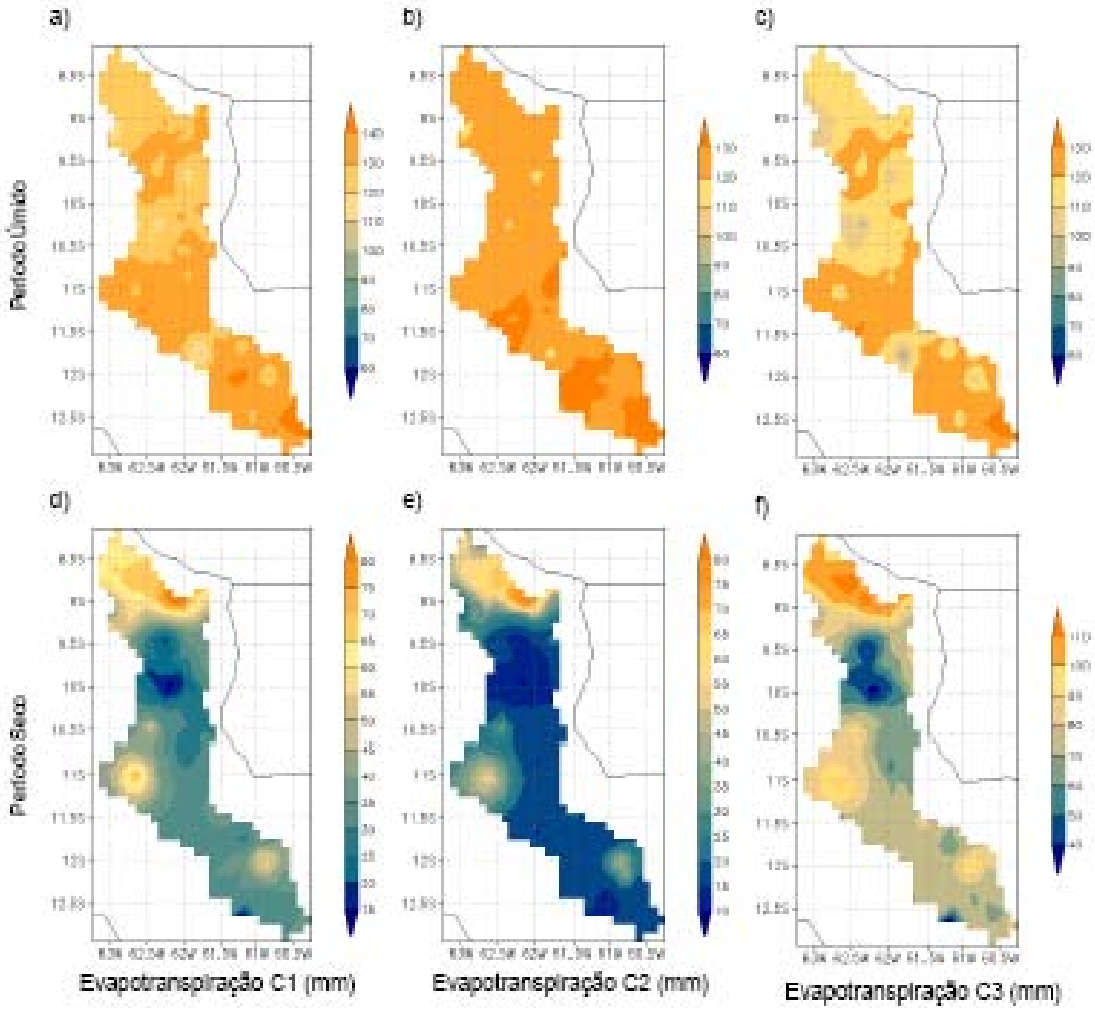


D. Victoria et al

Modeled evapotranspiration for 3 scenarios:
C1 – Pasture
C2 – Soybean
C3 – Forest

Wet season

Dry season



Virtual Scaleable Basin

Analysis for the Multi-Scaled Biophysics and Human Dimensions in a Collaborative Land/Atmosphere/Marine System

M. Logsdon, J. Richey, B. Campbell, M. Stoermer, H. Hadaway
University of Washington, School of Oceanography

On Saturday:

Task 1. Evaluate the issues to be addressed (following from previous synthesis sessions)

Task 2. Sort-out the overall "protocol" for how the work is to be done, recognizing realities (resources, people) of respective projects

Task 3. Develop the work plan (including informatics)

Task 4. Discuss preferred outlets