INTEGRATION OF TERRESTRIAL & AQUATIC SYSTEMS AT THE REGIONAL DIMENSION

"SMALL INCREMENTS OF EFFORT ADD VALUE"

Working Group

Fortaleza, Nov 2003

Proposal: Sessions per topic at July 2004 Conference

I. Concur/converge on overall issues

"To what extent (and how) do fluvial systems influence the net carbon balance of the Amazon, with variability in climatic and anthropogenic forcing?" (i.e. what are the fluvial systems pathways of atmospheric CO2?)

**** How do we better capture the linkages (local to regional to continental scales) between terrestrial and aquatic systems?***
**** Nutrient dynamics***

II. SYNTHESIS ELEMENTS
(required to "complete" picture)

(1) Derive a uniform "physical template," at scales relevant to (regional) fluvial processes:
(2) Distribution of water across landscape (note: not done elsewhere) (relevant to a set of clients)
(3) Sources and transport of key chem species (C, N) from uplands to streams (flowpath dependent, capture in models)
(4) In stream net routing (advection and reaction) down networks
(5) Fluvial/atmosphere exchange (water to air)
(6) "Broader" use of fluvial system dynamics to constrain terrestrial processes (?)

SUMMARY: Field efforts, Data synthesis/modeling efforts

III. Terrestrial->aquatic carbon and nutrients Data Synthesis/Modeling Activities

- At the small watershed scale across land use types (carbon and nutrients),: Synthesis of processes involved: including comparative modeling studies on areas that are data rich (hillslope and small-scale streams) – **Chris,** Eric, Linda, Ricardo, Mercedes, Johannes, Marc Kramer, Jeff, Marisol, A. Nobre, Hodnett, Waterloo, Mark,

- Synthesis activities at the meso-scale (Ji-Parana, Bananal) – **Jeff**+team, Humberto Rocha, …

- Large-scale comparative modeling studies
  - Physical hydrology (discharge, flooded area) – **Marcos**, Jeff, Mike, John, Laura, Evlyn
  - Carbon – **Jeff**, Mike, Erica, Chris Potter, John, Humberto Rocha,

- Synthesis activities at the meso-scale (Ji-Parana, Bananal) – **Jeff**+team, Humberto Rocha, …

- Large-scale comparative modeling studies
  - Physical hydrology (discharge, flooded area) – **Marcos**, Jeff, Mike, John, Laura, Evlyn
  - Carbon – **Jeff**, Mike, Erica, Chris Potter, John, Humberto Rocha,

III. Terrestrial->aquatic carbon and nutrients Field Activities

- Coordination of data collection field activities

- coordination across sites, campaigns”