



Amazon Scenarios: Modeling Interactions Among Land Use, Fire, and Climate CD-05, LC-14

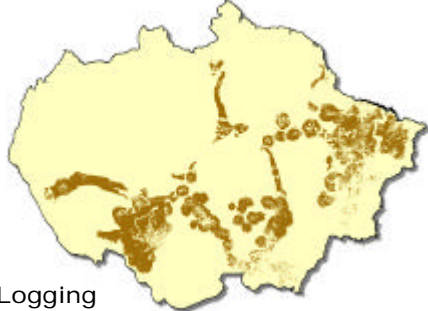


Investigators: Daniel Nepstad (PI, WHRC, IPAM), Paulo Moutinho (PI, IPAM), Carlos Klink (PI, UNB), Pedro Dias Silva (USP), Britaldo Soares Filho (UFMG), Luis Solórzano (WHRC), Carlos Nobre (CPTEC), Heloisa Miranda (UNB), Eustaquio Reis (IPEA), Georgia Carvalho (WHRC), Robert Kaufmann (BU), Greg Amacher (VT).

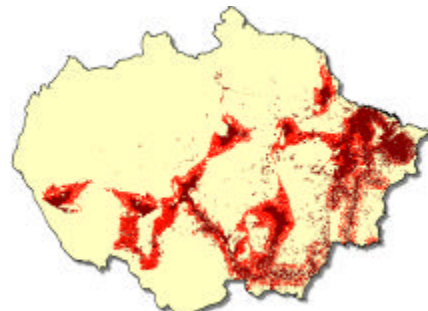
WHRC: The Woods Hole Research Center; IPAM: Instituto de Pesquisa Ambiental da Amazônia; UNB: Universidade Federal de Brasília; USP: Universidade de São Paulo; UMG: Universidade Federal de Minas Gerais; CPTEC: Centro e Previsão de Tempo e Clima; IPEA: Instituto de Pesquisa Econômica Aplicada; BU: Boston University; VT: Virginia Tech.

Economics

- Sawmill interviews
- Spatial model of logging profitability
- Pasture, small-holders, Agri-business
- Cost functions, production models (agri-business)
- Logit models (spatial datasets)
- Econometric models (census data)
- Simulation models along economic corridors



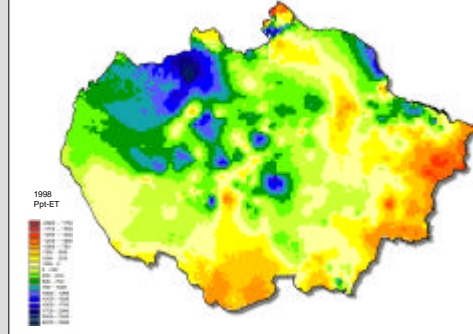
Logging



Land Conversion

Climate

- RAMS mesoscale climate model
- COLA GCM
- Climate responses to landcover scenarios



Landcover

Rain, T

Aerosols

Rainfall, T

Landcover

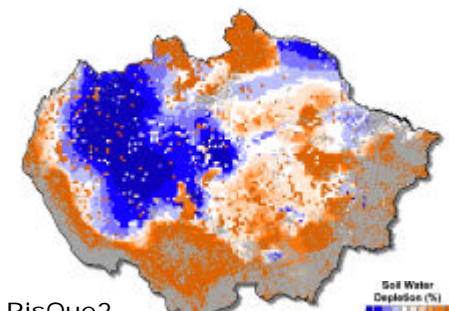
Burned Areas

Ecosystems

- 3PG ecosystem model
- Houghton carbon bookkeeping model
- Fuel loading and microclimate
- Plant-available soil water
- Gap model to track forest disturbance/recovery



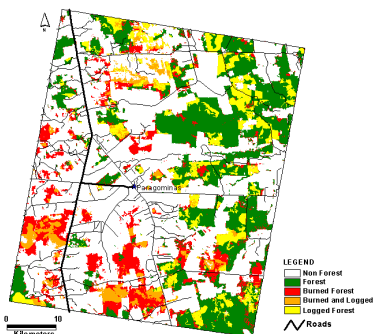
CARLUC



RisQue2

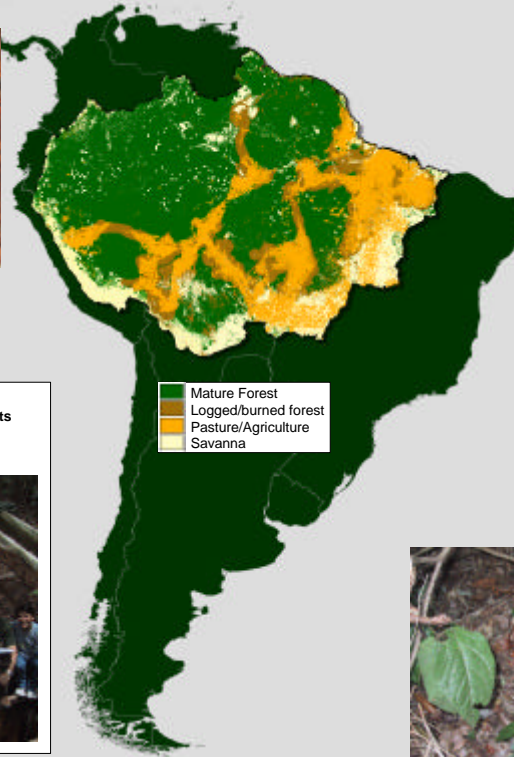
Four reference landscapes

- 30 x 30Km mapped landscapes:
- Forest fire and logging scar
- Regrowth
- Agriculture/Pasture
- Paragominas, Mato Grosso, Santarém, Acre



Training

- Six Brazilian PhD students
- Annual field course in Ecosystem ecology



- Mature Forest
- Logged/burned forest
- Pasture/Agriculture
- Savanna



Savannization Experiments:

Forest response to experimental burns:

- 2 distances from edge
- 2 levels of seed input

Forest Flammability Experiments:

- LAI, PAW, fuel load, fuel moisture
- Santarém, Santana do Araguaia

Subsoil controls on Forest Boundaries

