

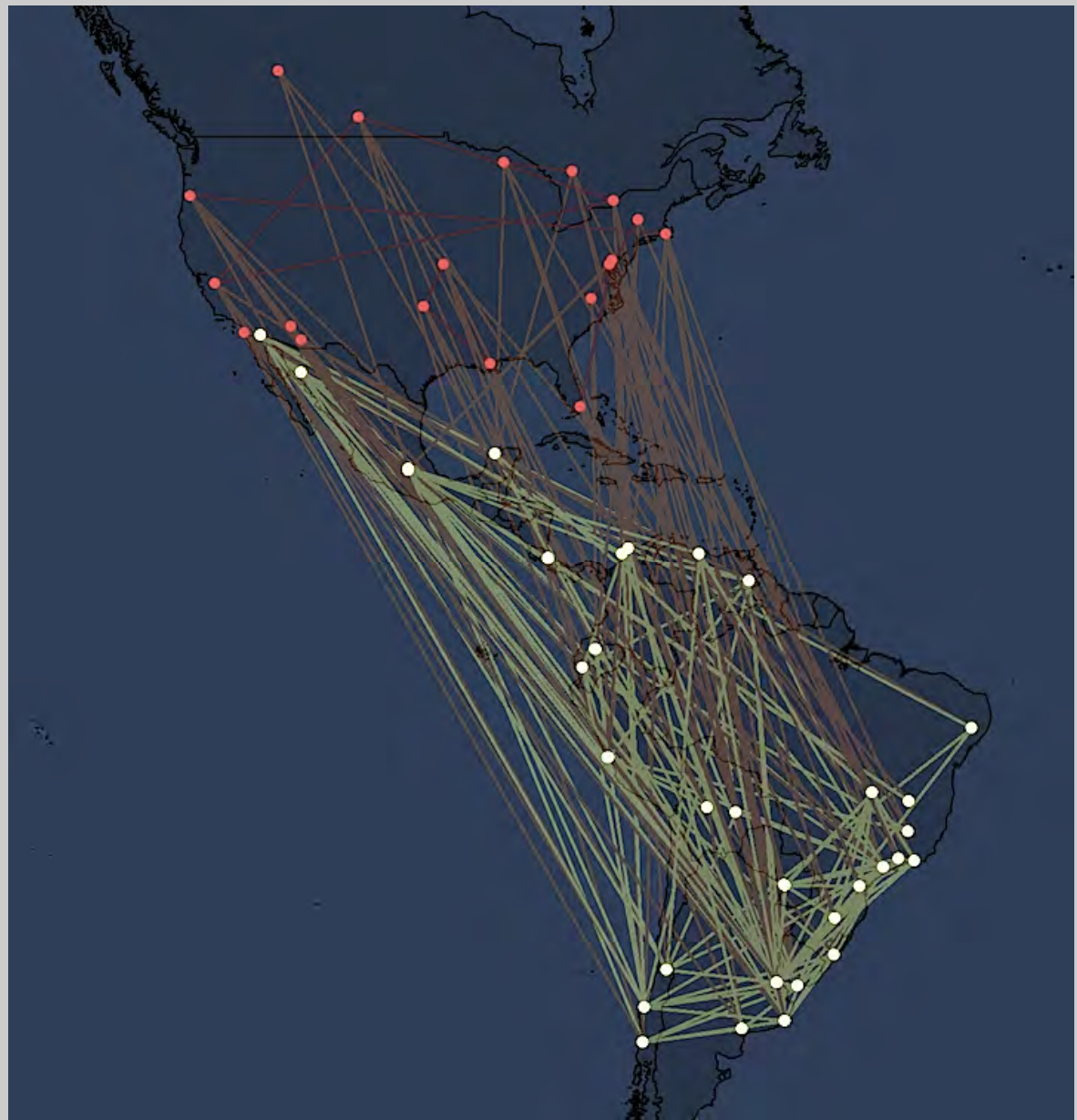


INSTITUTO INTERAMERICANO PARA LA INVESTIGACIÓN DEL CAMBIO GLOBAL



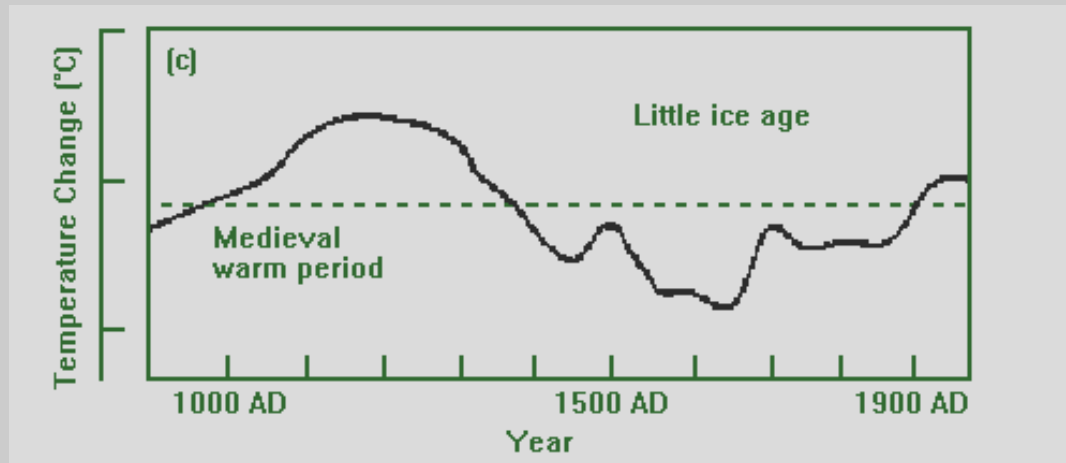
INTER-AMERICAN INSTITUTE FOR GLOBAL CHANGE RESEARCH

redes de
investigación

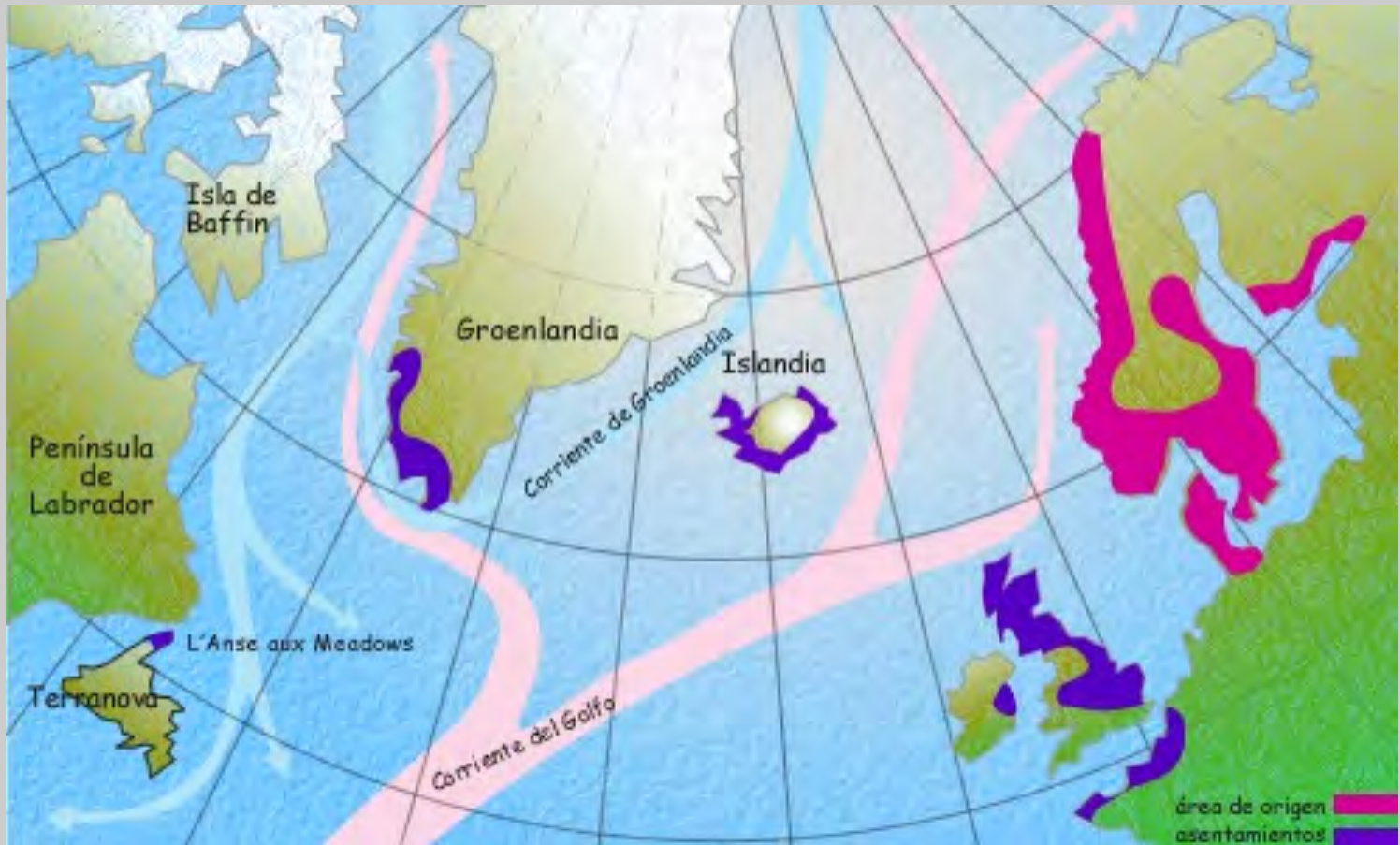


INTER-AMERICAN INSTITUTE FOR GLOBAL CHANGE RESEARCH

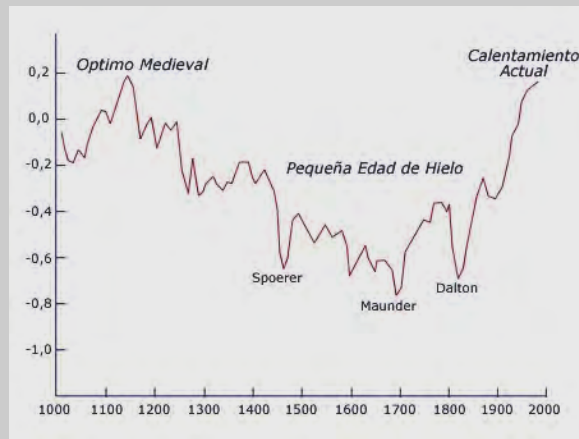
Past Climate Change



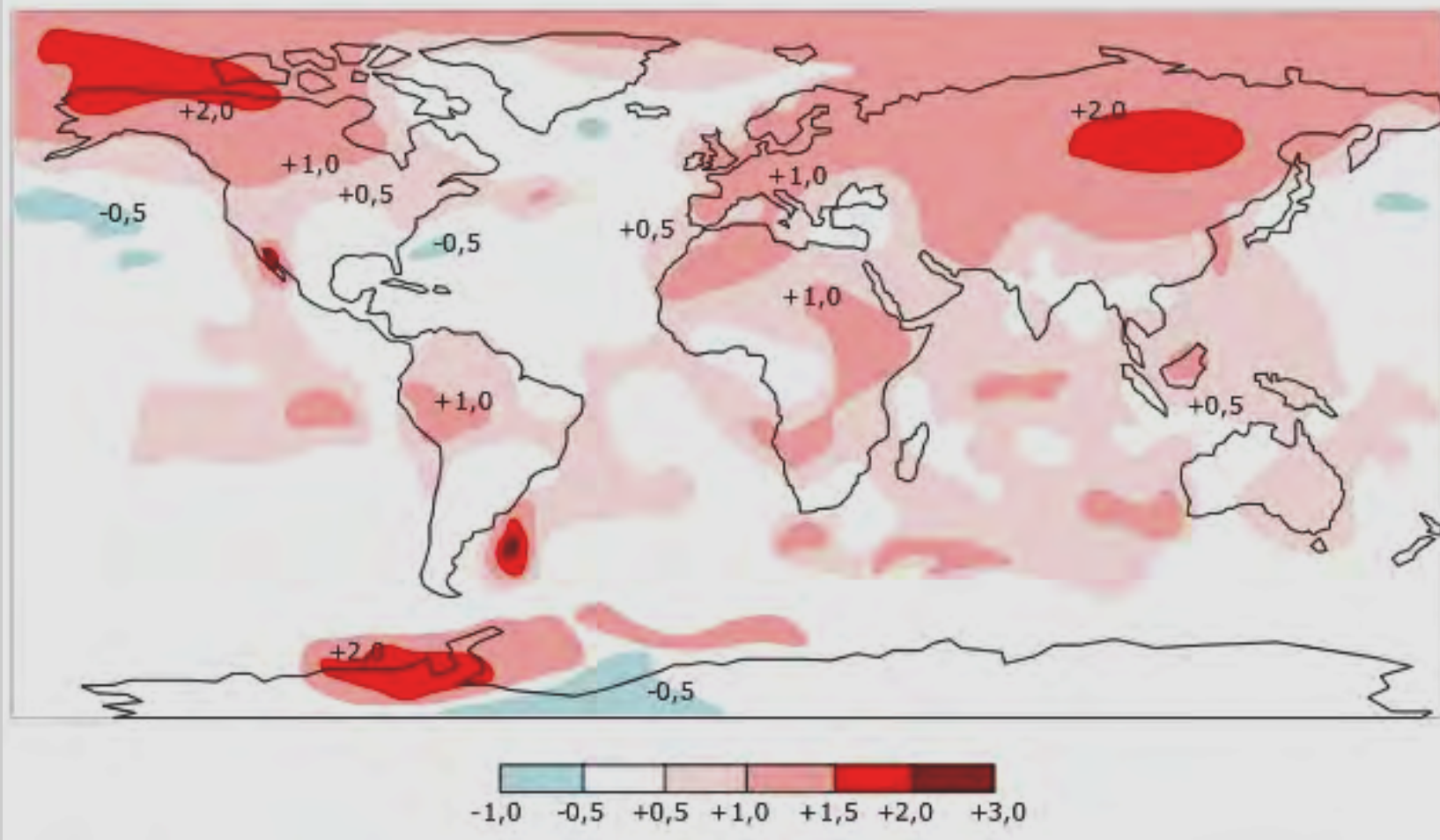
Climate Opportunities - Medieval High Viking Settlements



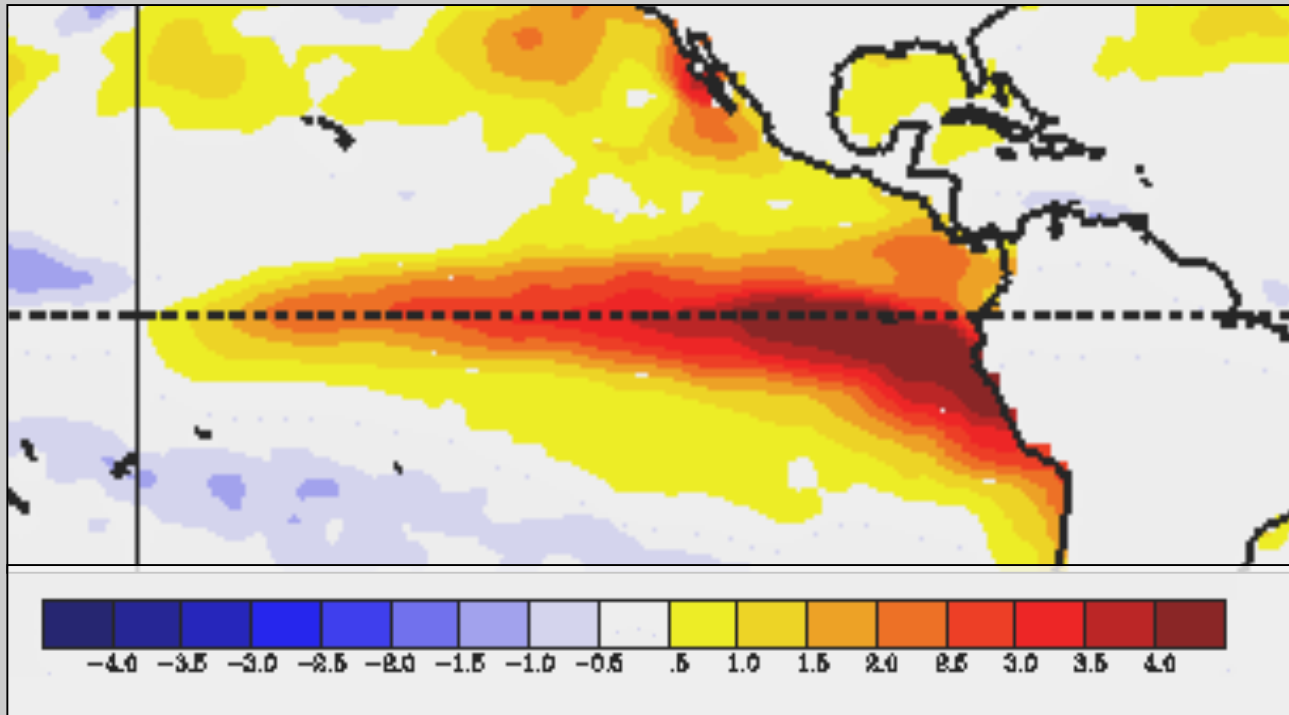
Little Ice Age



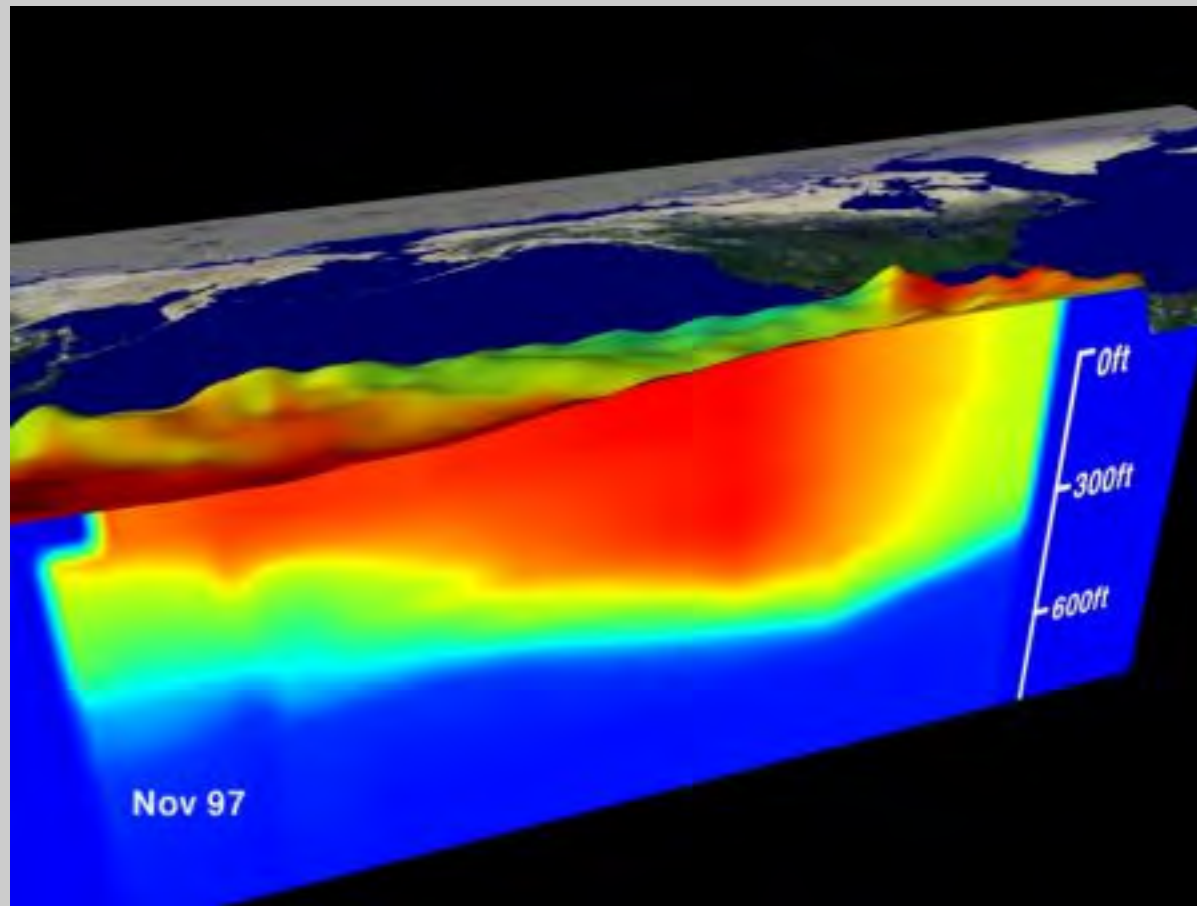
Modern Climate change (TMean) trend 1956-2005



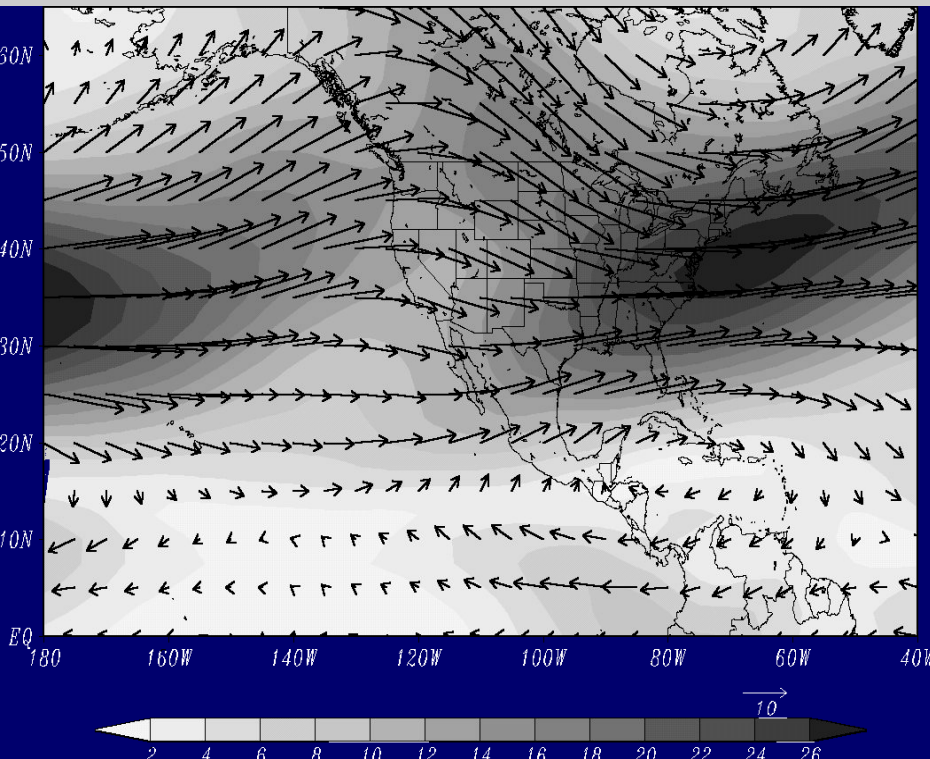
Regional-Global:1997 El Niño



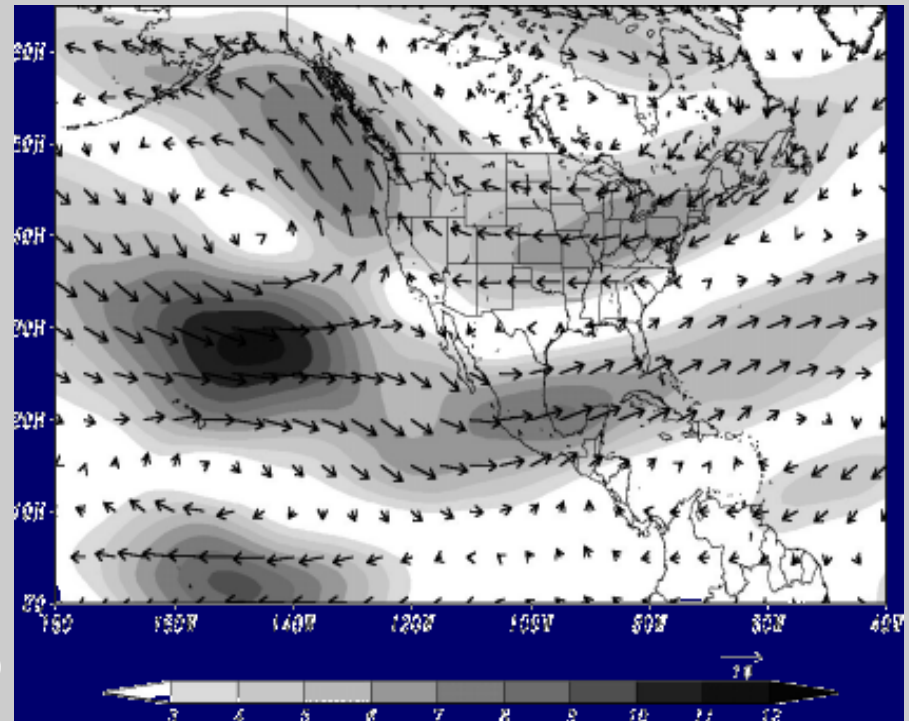
Equatorial water temperature, 1997 El Niño



El Niño Teleconnections



Circulation at 500 mb



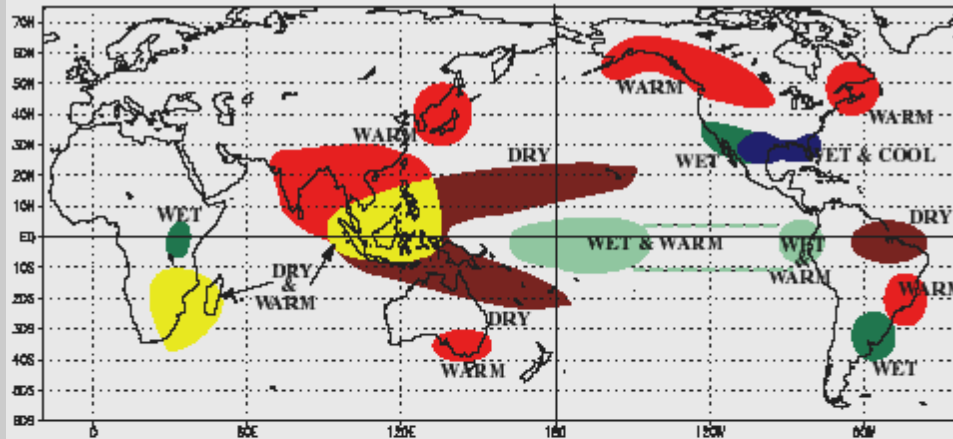
Anomaly of 500 mb circulation
under El Niño



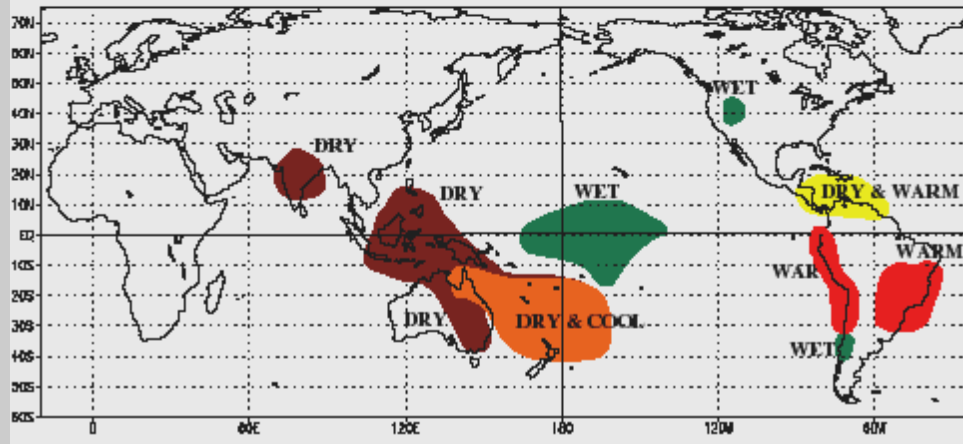
INTER-AMERICAN INSTITUTE FOR GLOBAL CHANGE RESEARCH

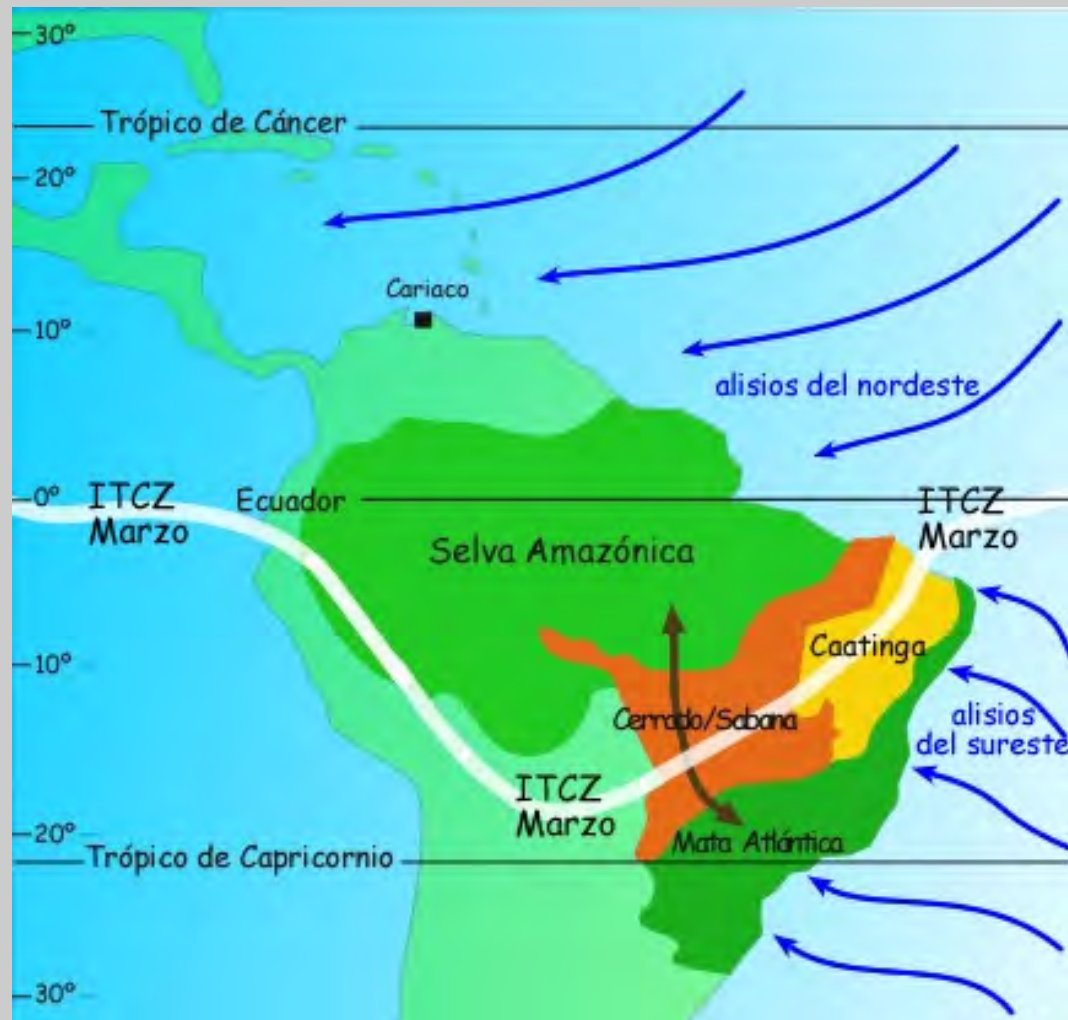
Global El Nino effects

WARM EPISODE RELATIONSHIPS DECEMBER - FEBRUARY



WARM EPISODE RELATIONSHIPS JUNE - AUGUST





Amazon drought 2005

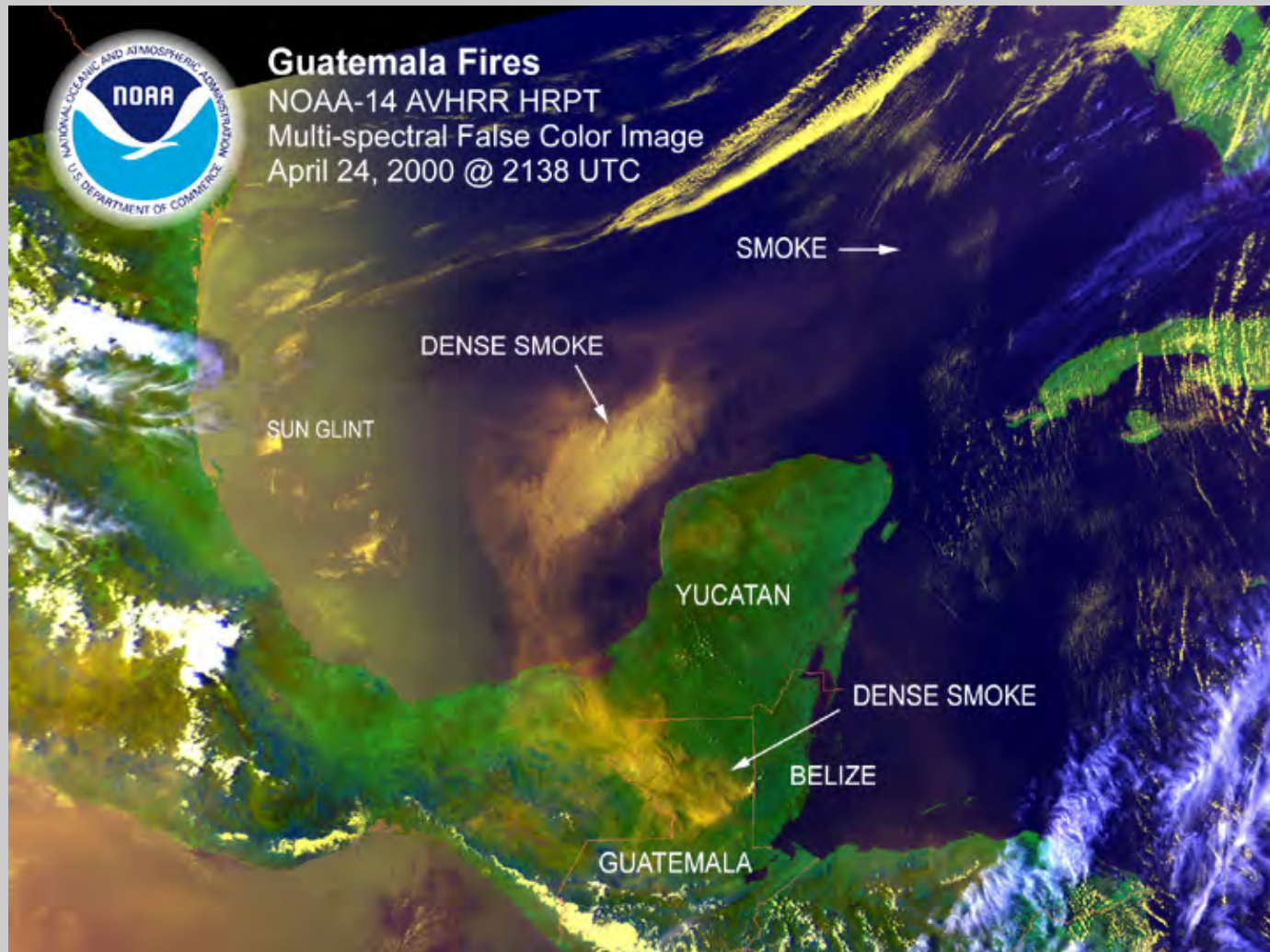


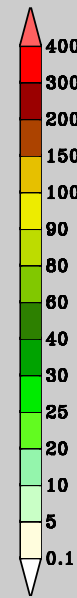
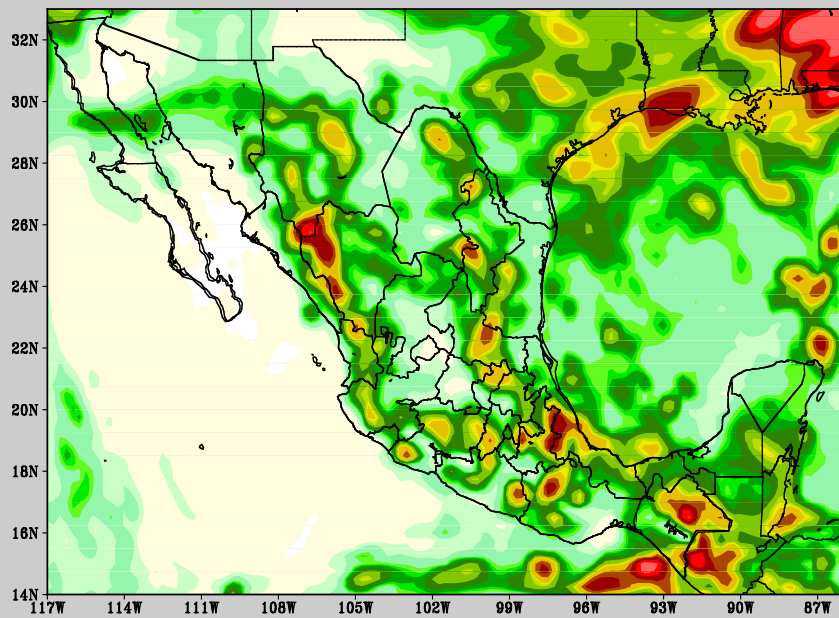
Amazon Fires



INTER-AMERICAN INSTITUTE FOR GLOBAL CHANGE RESEARCH

Agricultural Fires

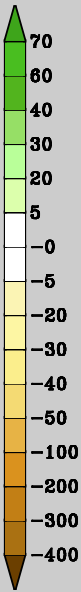
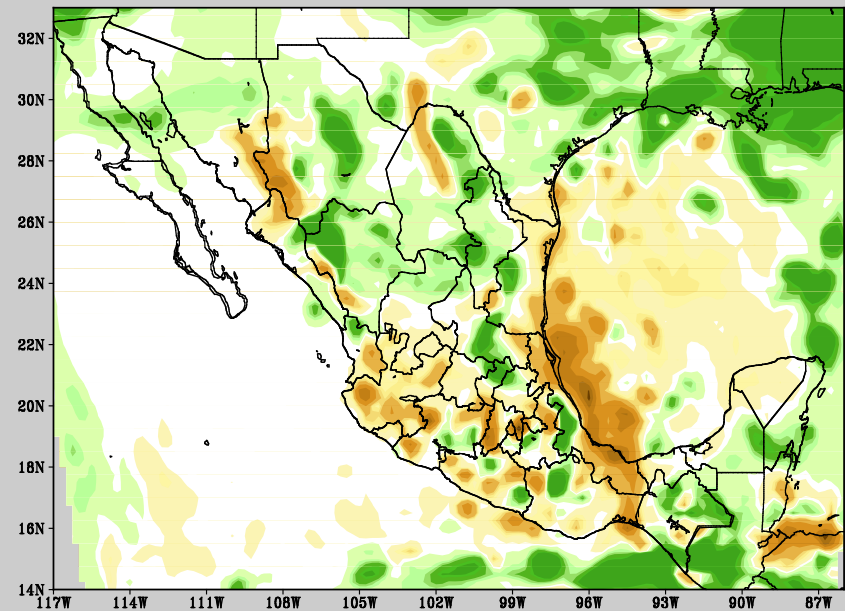




Simulación de lluvia para
junio 2001, cuando se
cambian los
bosques por pastizales

Diferencia en precipitación
entre simulaciones con
bosques y pastizales)

Diferencia B - A (mm)



Biodiversity is important



INTER-AMERICAN INSTITUTE FOR GLOBAL CHANGE RESEARCH

why?
how much?
what kind?
what for?
for whom?

at what price?



INTER-AMERICAN INSTITUTE FOR GLOBAL CHANGE RESEARCH

why?

- esthetics and tourism



why?

- ecosystem services

functional diversity is ill understood

positive effects of biodiversity on ecosystems
show diminishing returns at higher bd levels

there are mutual non-linearities not identities



INTER-AMERICAN INSTITUTE FOR GLOBAL CHANGE RESEARCH

how much?

what if biodiversity \neq ecosystem services

and

we cannot define a level of biodiversity (loss) that is safe

what then is the right amount of conservation?



INTER-AMERICAN INSTITUTE FOR GLOBAL CHANGE RESEARCH

what kind?

public perception is one of selected taxonomic diversity

but

rare species are likely to have small effects



how biodiversity matters to ecosystems depends
on what organisms there are

what for?

ecosystem services

ecosystem “physiology”

ecosystem “health” and resilience



INTER-AMERICAN INSTITUTE FOR GLOBAL CHANGE RESEARCH

for whom?

biodiversity conservation is seen as a luxury of rich nations

Debt for Nature Swaps re-enforce this perception



INTER-AMERICAN INSTITUTE FOR GLOBAL CHANGE RESEARCH

at most, \$ 5 per ha is paid for the
average debt for nature swap

this pricing is confirmed by logging license fees



INTER-AMERICAN INSTITUTE FOR GLOBAL CHANGE RESEARCH

at what price?

the right amount of biodiversity conservation is where the marginal economic benefits from conservation equal the marginal costs of conservation

expenditures on ecosystem conservation are some $\$10^{10}$ compared to some $\$10^{14}$ for economic subsidies

“the world does not care too much about the biodiversity capital and its bequests to future generations”



studies of human development and biodiversity must

explore potential outcomes of decisions

explore links and tradeoffs between
poverty & development ↔ biodiversity conservation

collaborate with policy makers from the beginning
to identify questions and interventions

communicate, communicate more, communicate clearly



INTER-AMERICAN INSTITUTE FOR GLOBAL CHANGE RESEARCH

in "development" studies

nobody would offer a single index of "diversity"

education

wealth

poverty

mortality

morbidity

demographics

infrastructure

child mortality

access to water

life expectancy

health care

energy use

resources

etc

etc

etc

etc

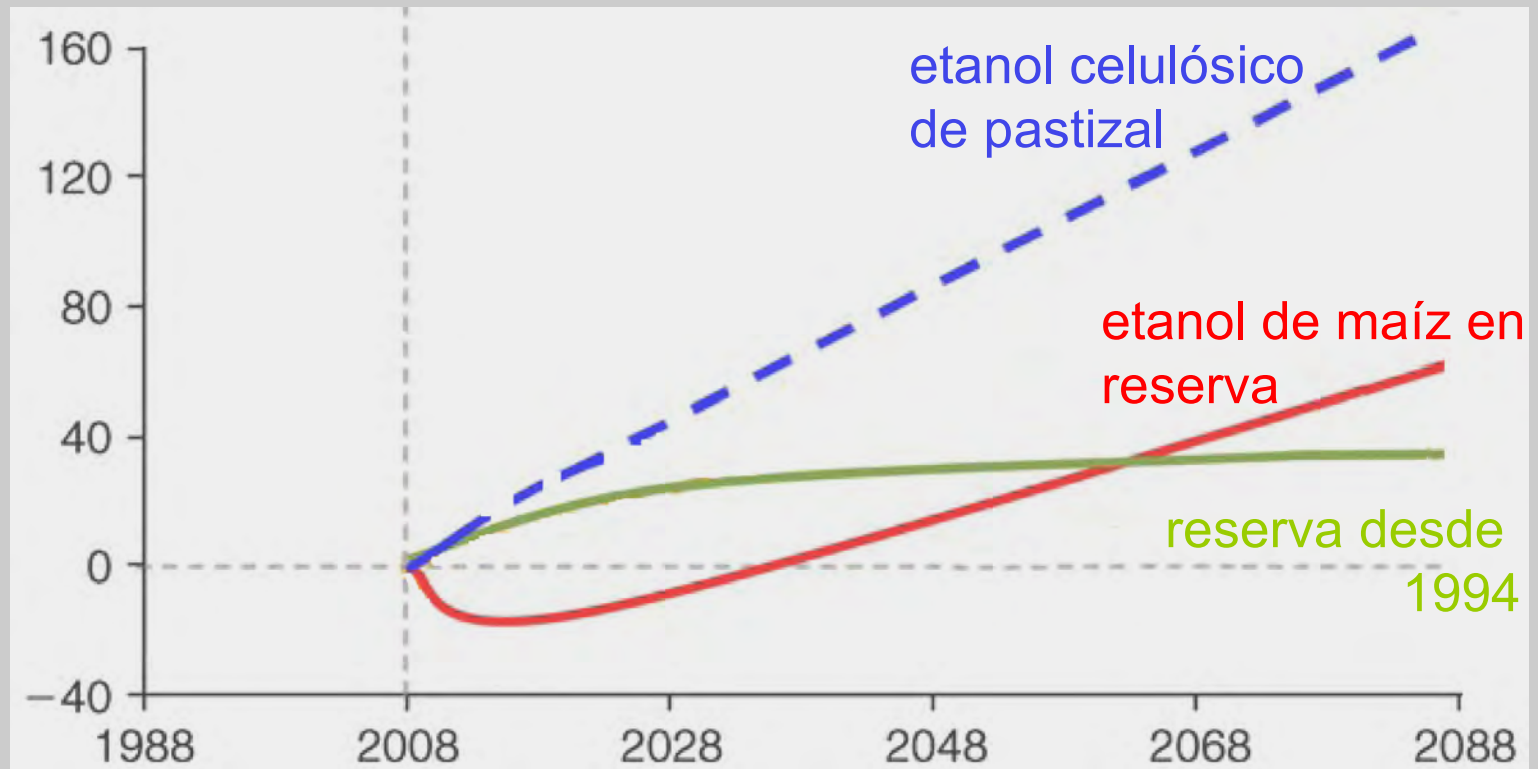
- so why would we accept it
in ecosystem studies ?



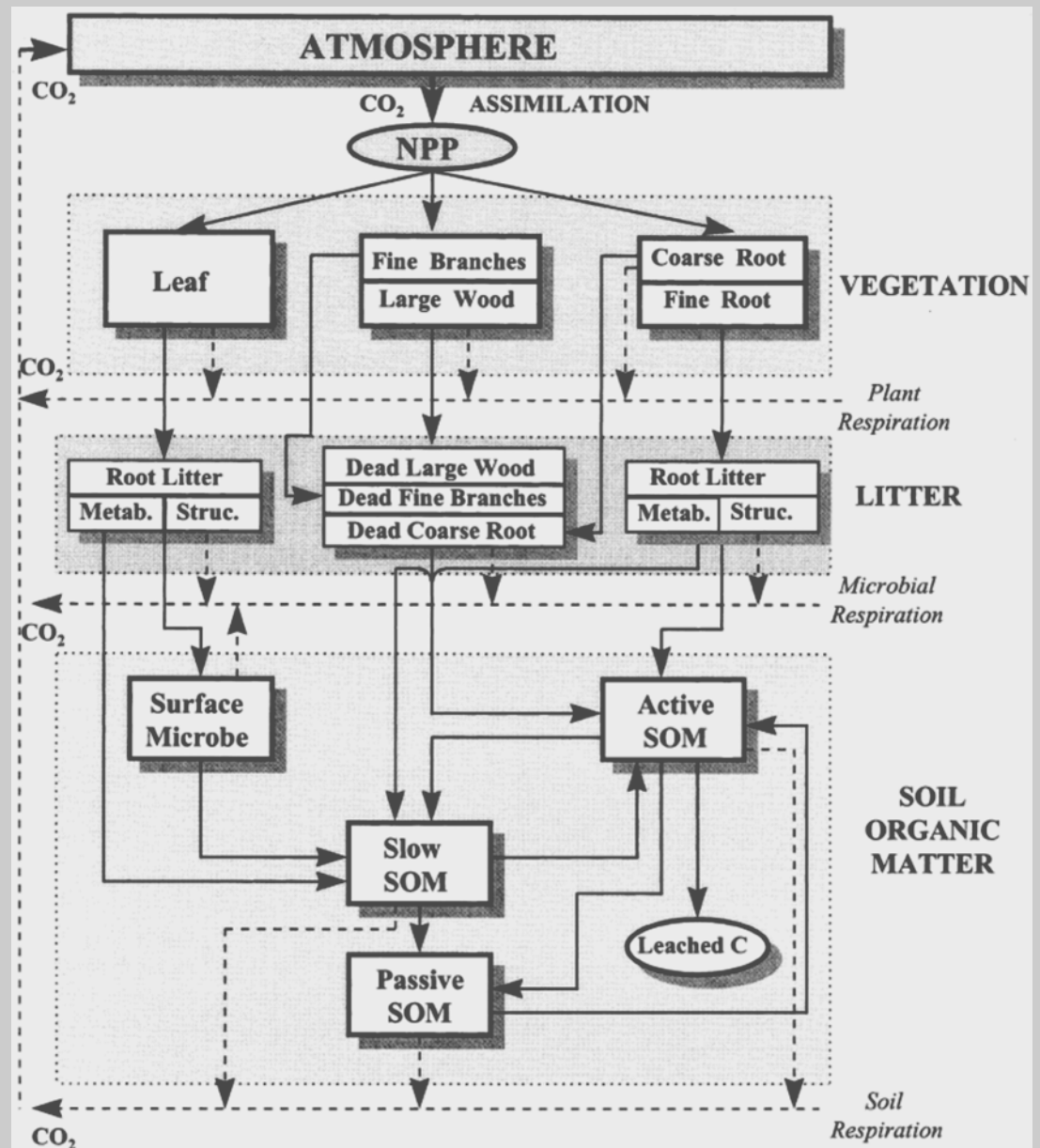
INTER-AMERICAN INSTITUTE FOR GLOBAL CHANGE RESEARCH

Ecosystem services: estimación de GEI evitados/secuestrados

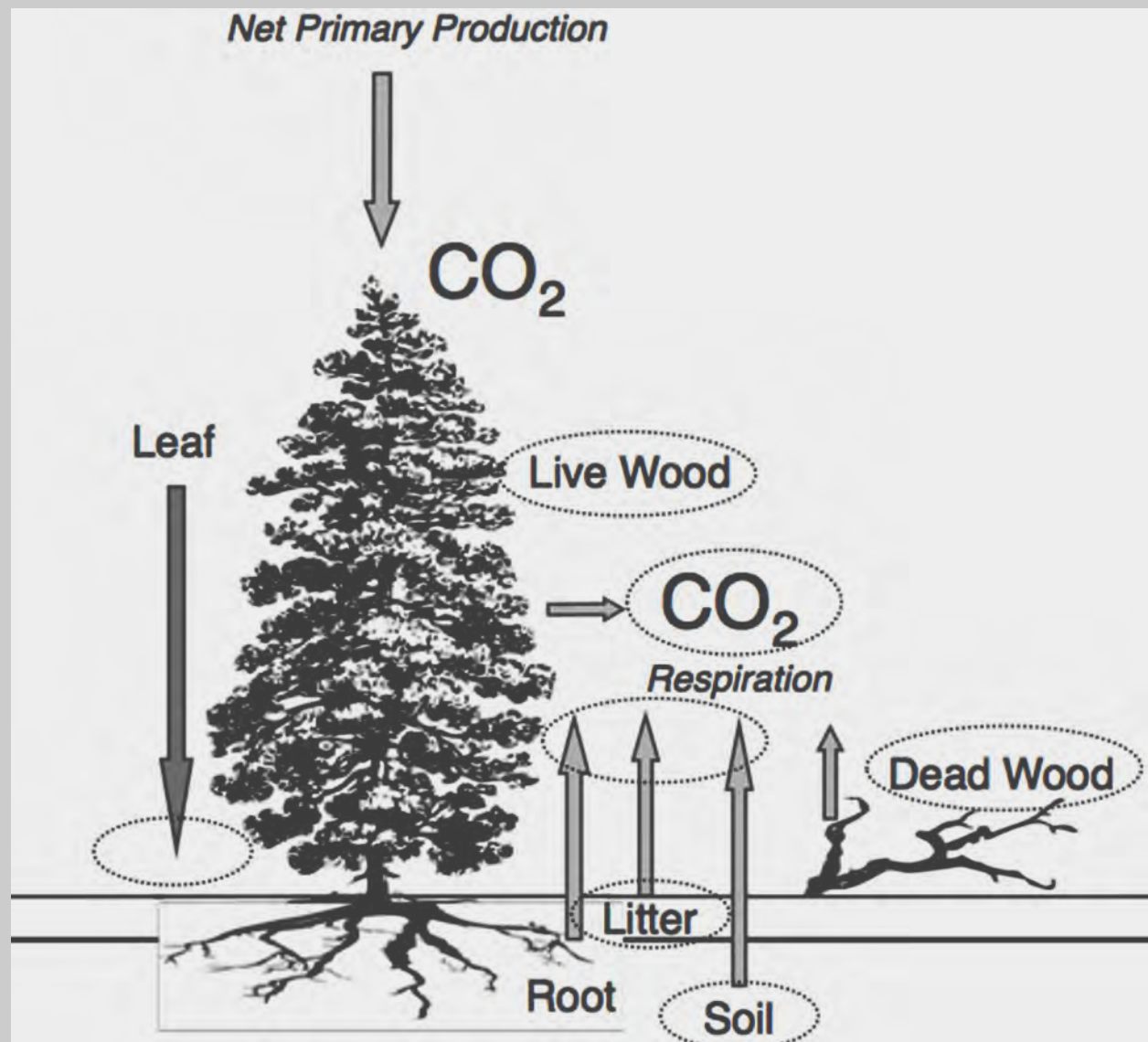
t CO₂
/ ha



Century Model



INTER-AMERICAN INSTITUTE FOR GLOBAL CHANGE RESEARCH



research

data

models

information

synthesis

knowledge

judgment

decision

action

monitoring



INTER-AMERICAN INSTITUTE FOR GLOBAL CHANGE RESEARCH