

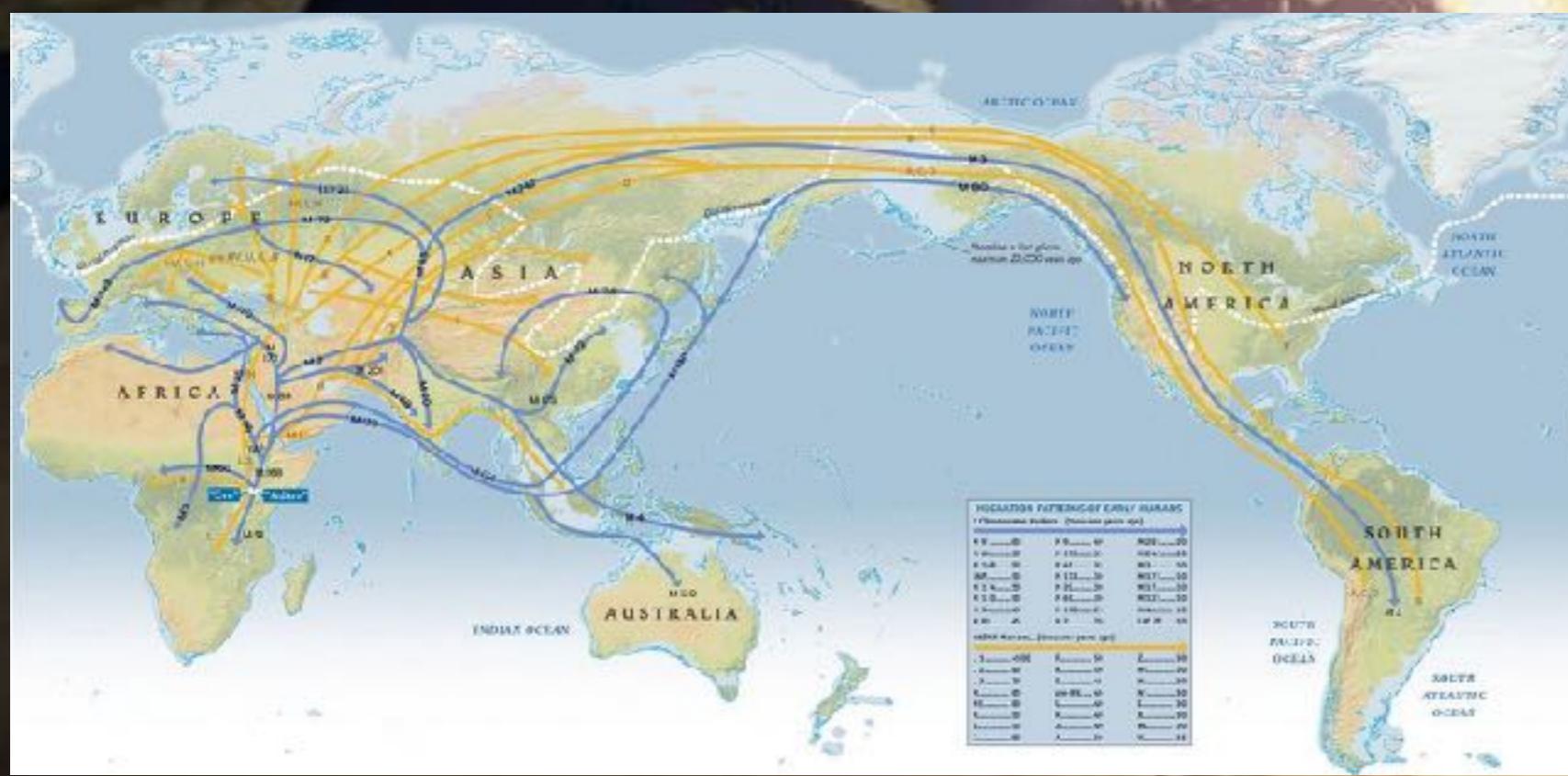
PROJECT



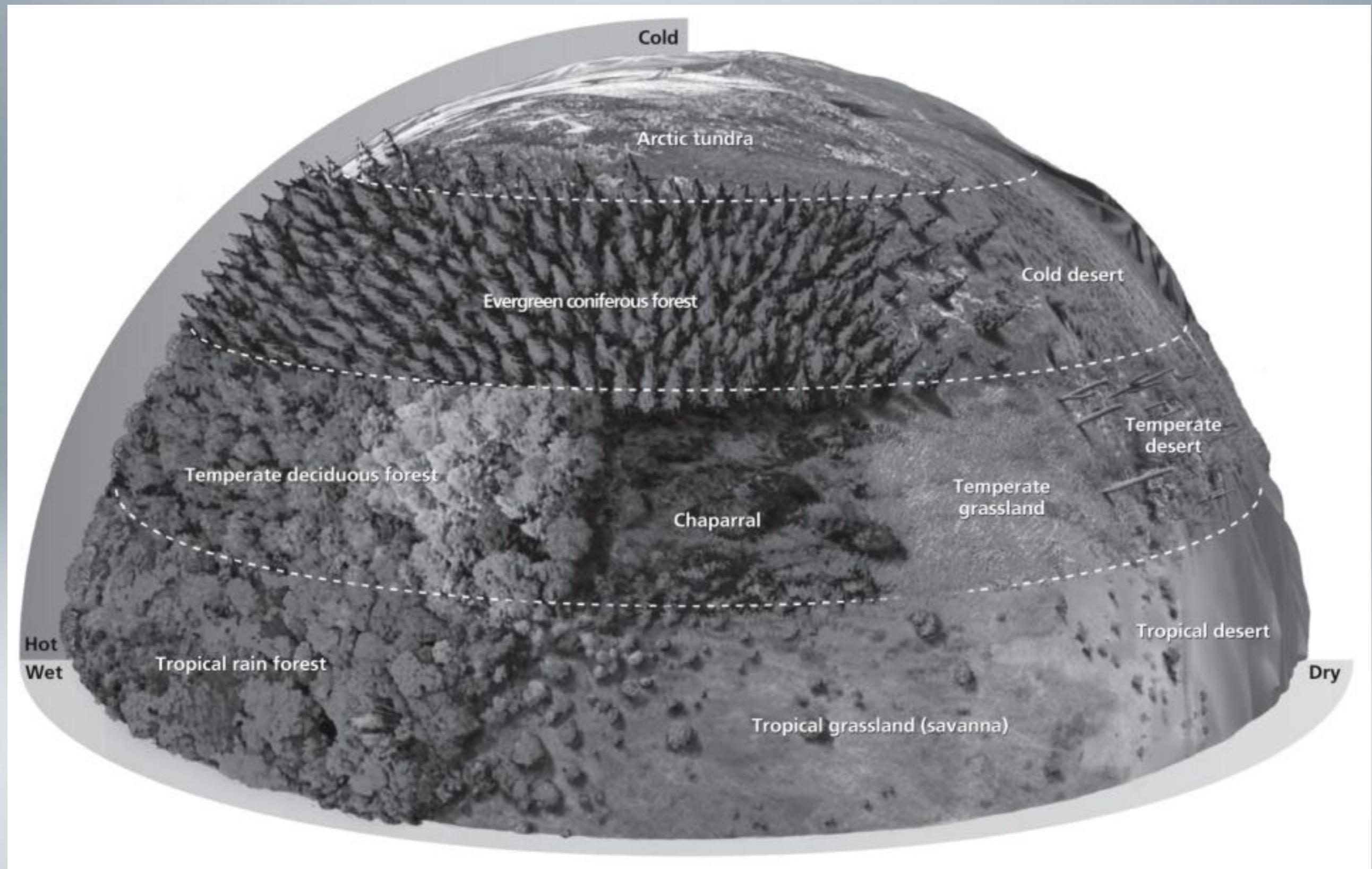
DRAWDOWN

IS BASED ON METICULOUS
RESEARCH THAT ANALYZES HOW
AND WHEN WE CAN REVERSE
GLOBAL WARMING.

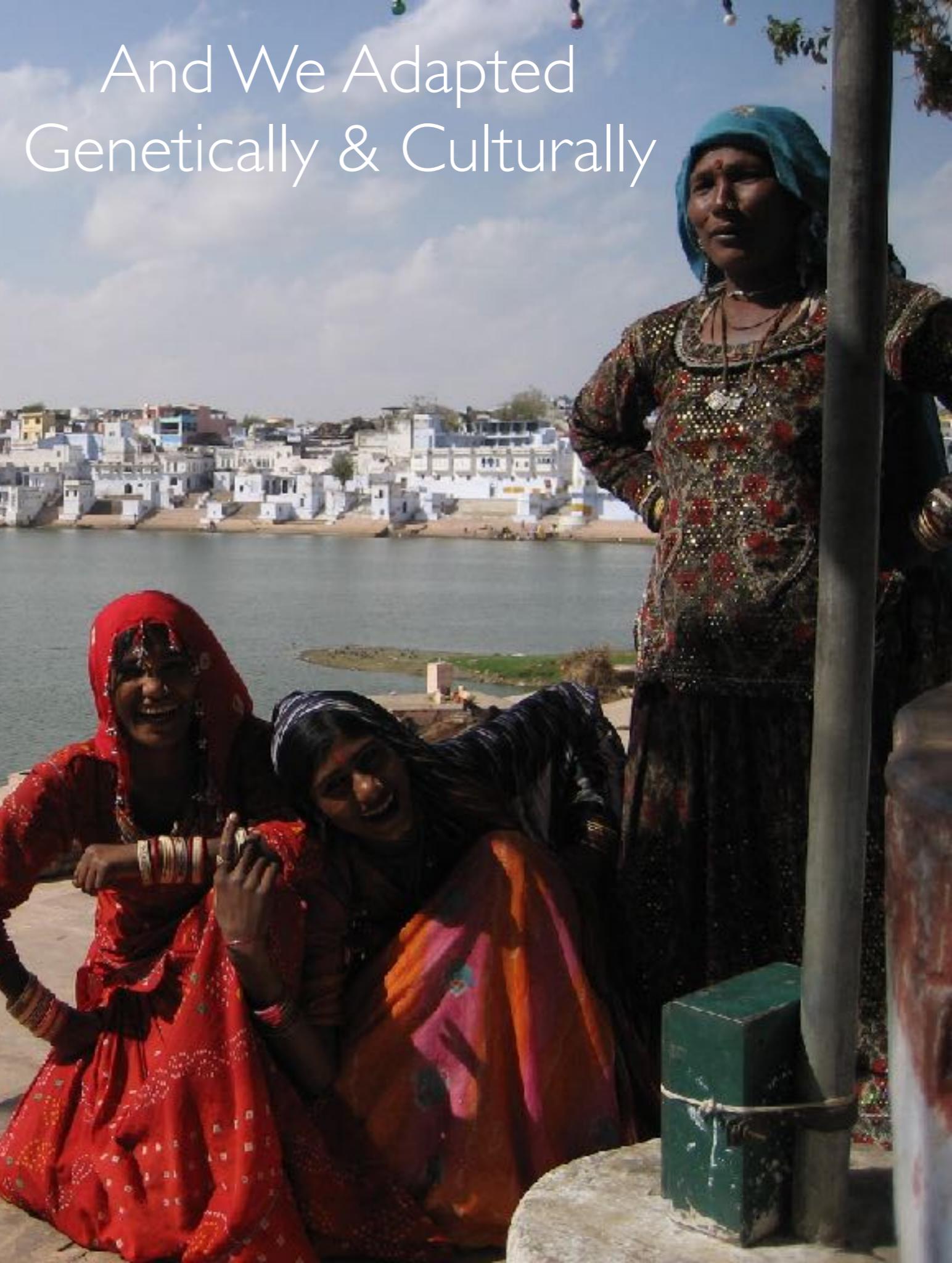
The Human Journey: Out of Africa Beginning c.65,000 BP



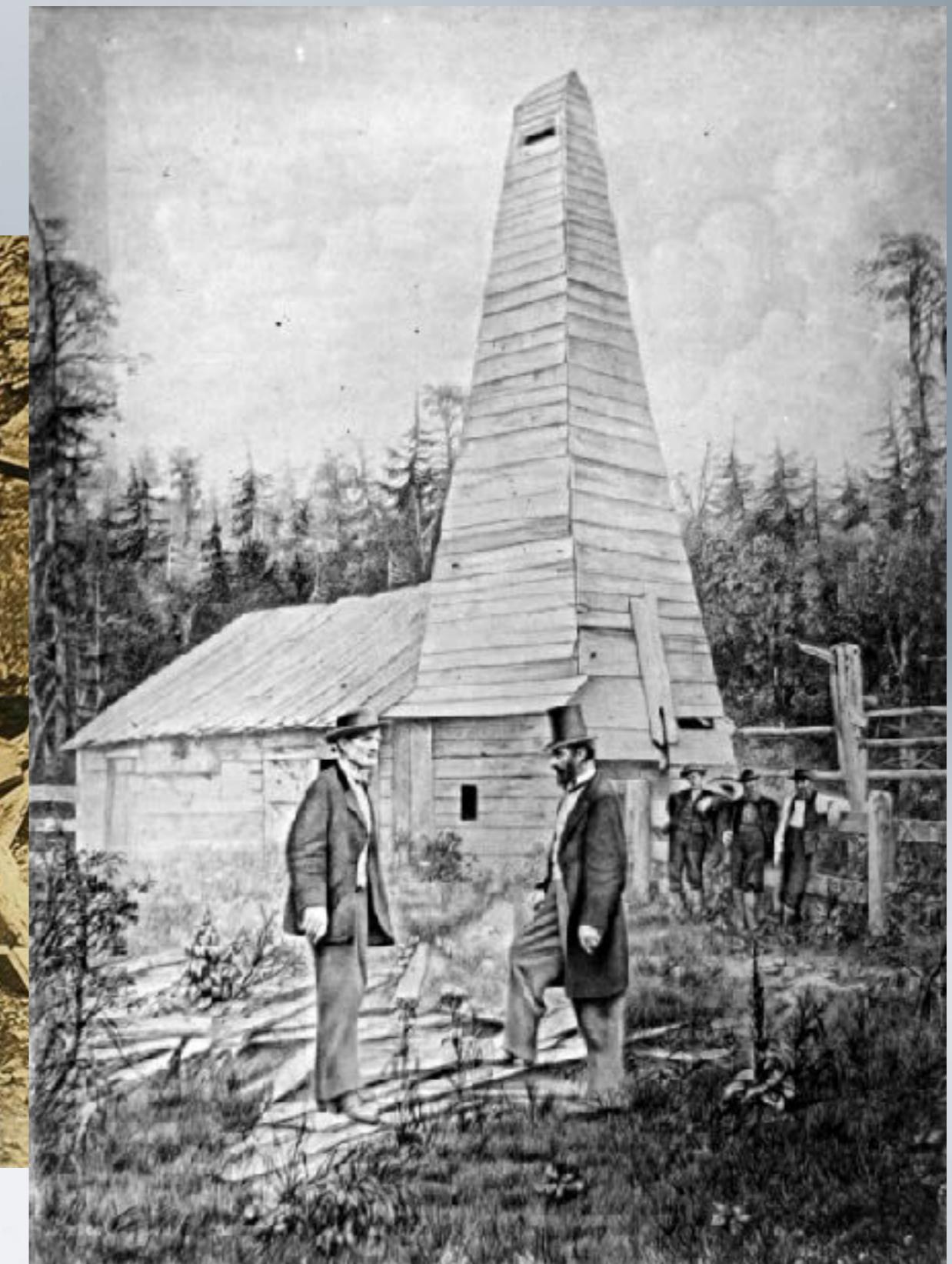
We Adapted to Our Climates



And We Adapted
Genetically & Culturally



And then we Discovered Fossil Fuel
Industrial Coal: late 1700's
Oil: 1869



CREATING A FOSSIL FUEL CULTURE

Western Culture:

- We Consume 400 Quadrillion BTU/yr (14,000 times this falls on the Earth from the sun/yr.)
- 86% of that is derived by Fossil Fuel
- Currently the average American would need 70 people to replace our energy consumption
- One Gallon of Gasoline has the equivalent to 12 weeks or 500 hours of human labor
- We consume 37,000 years of Biomass in one day
- We need to get to one days worth

2001 stats Source: LocalEnergy.org

Which has Created:



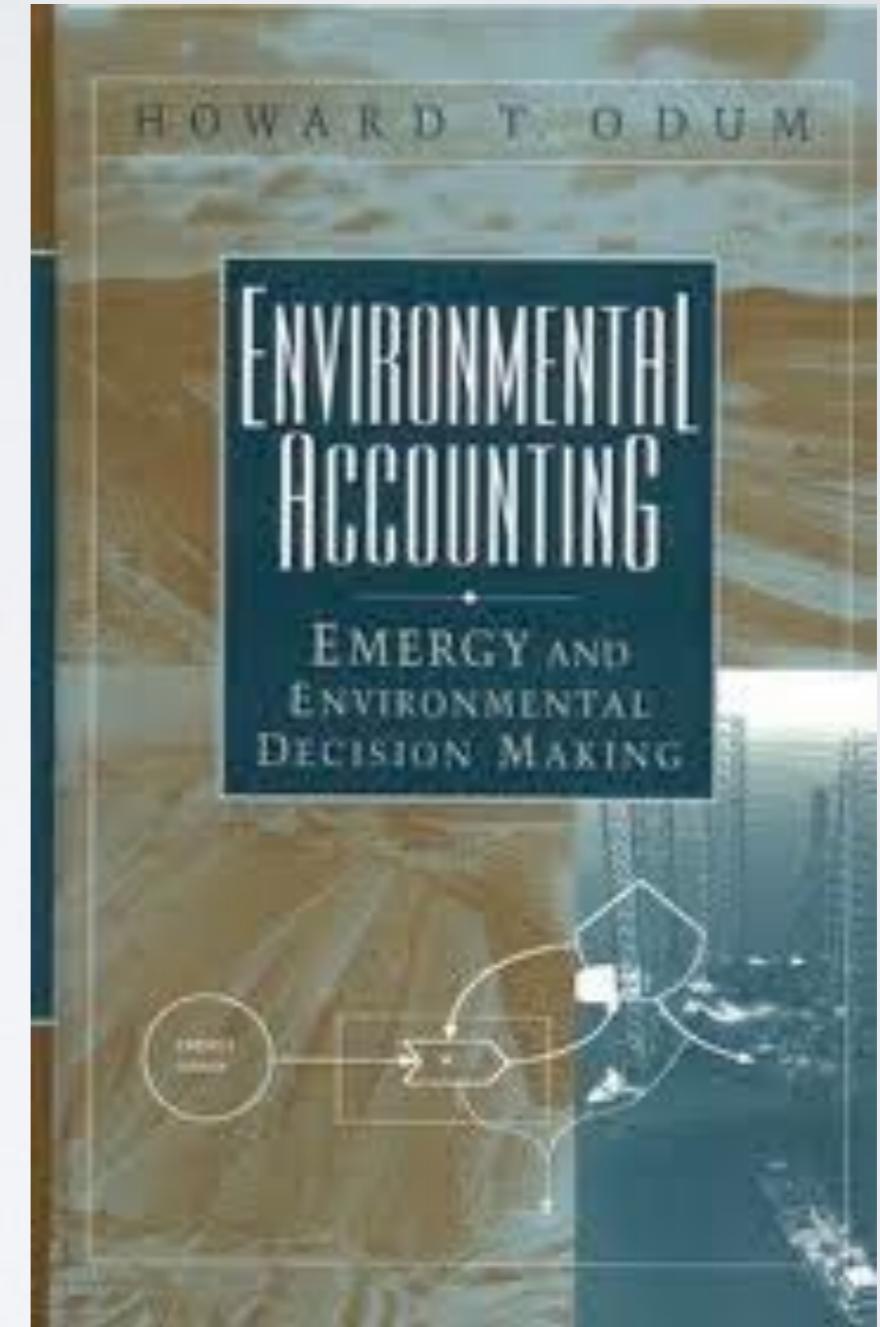
AWAWARENESS OF THE NET ENERGY ECONOMY

- Howard Odum: Energy Accounting
- Quantifies Energy invested from all inputs including ecosystems & sun to create energy
- Energy in vs. energy out (energy payback)

His Book:

“Environmental Accounting: ENERGY and environmental decision making.”

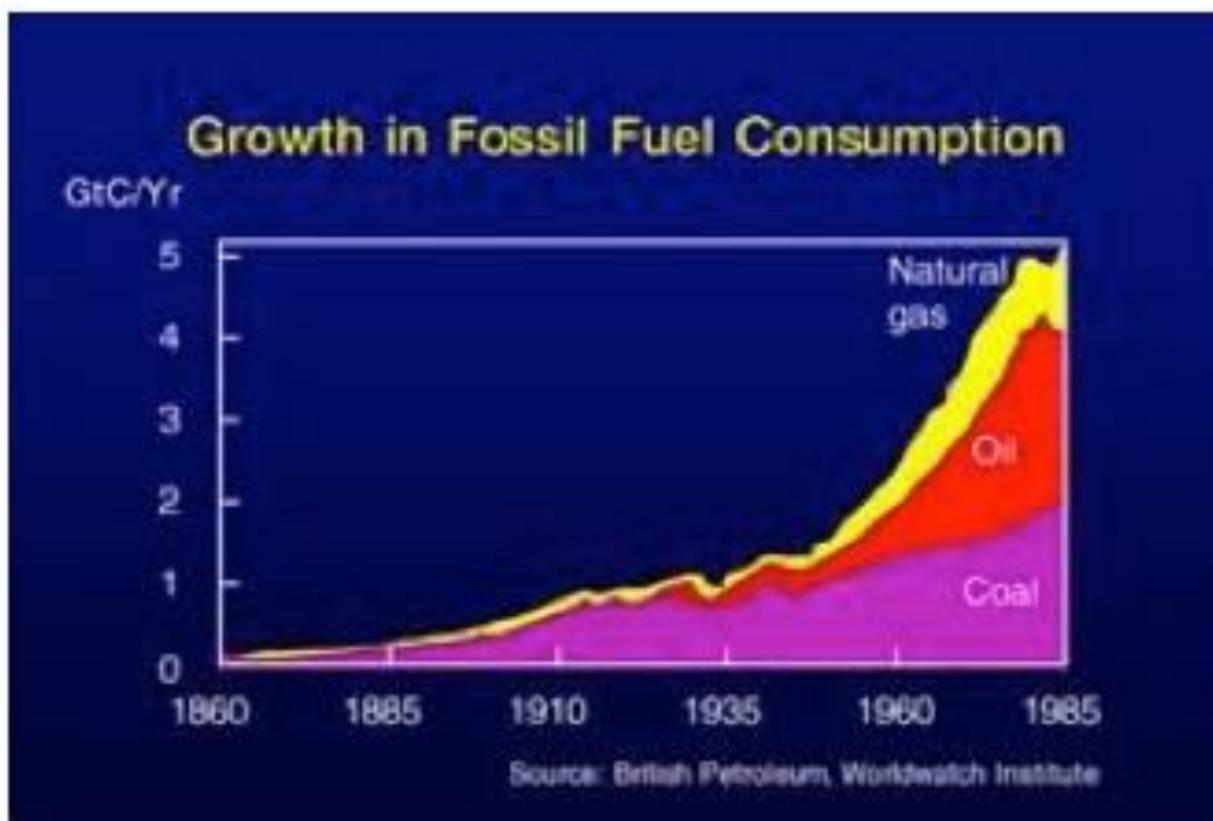
- Seen as the benchmark for Global energy accounting



POPULATION GROWTH

An aerial photograph of a vast city at night, showing a dense concentration of lights from buildings and streets. The lights are arranged in long, horizontal streaks due to the slow shutter speed of the camera, creating a sense of motion and urban sprawl. The city extends from the foreground into the distance, with more lights visible on the horizon under a dark sky.

Exponential Growth & Desertification: Accelerated by Fossil fuel



- Managing Population Growth is critical for stability
 - an ethic of 1-3 children per family should keep us stable

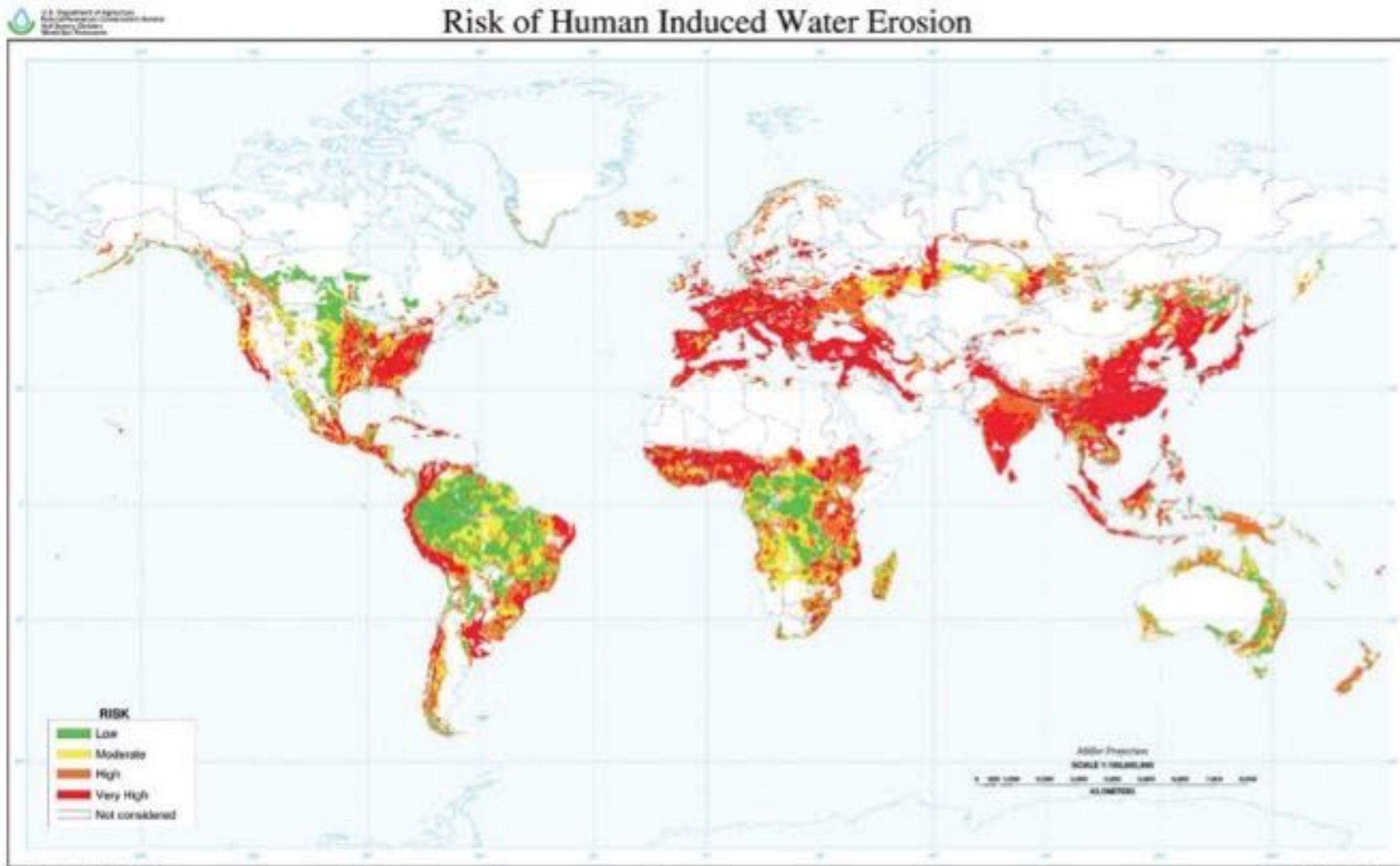
SPECIES EXTINCTION: 6X



SOIL LOSS/DESERTIFICATION



Rand Corporation Soil Erosion Study



EXPONENTIAL GREED: PETRO-CAPITALISM



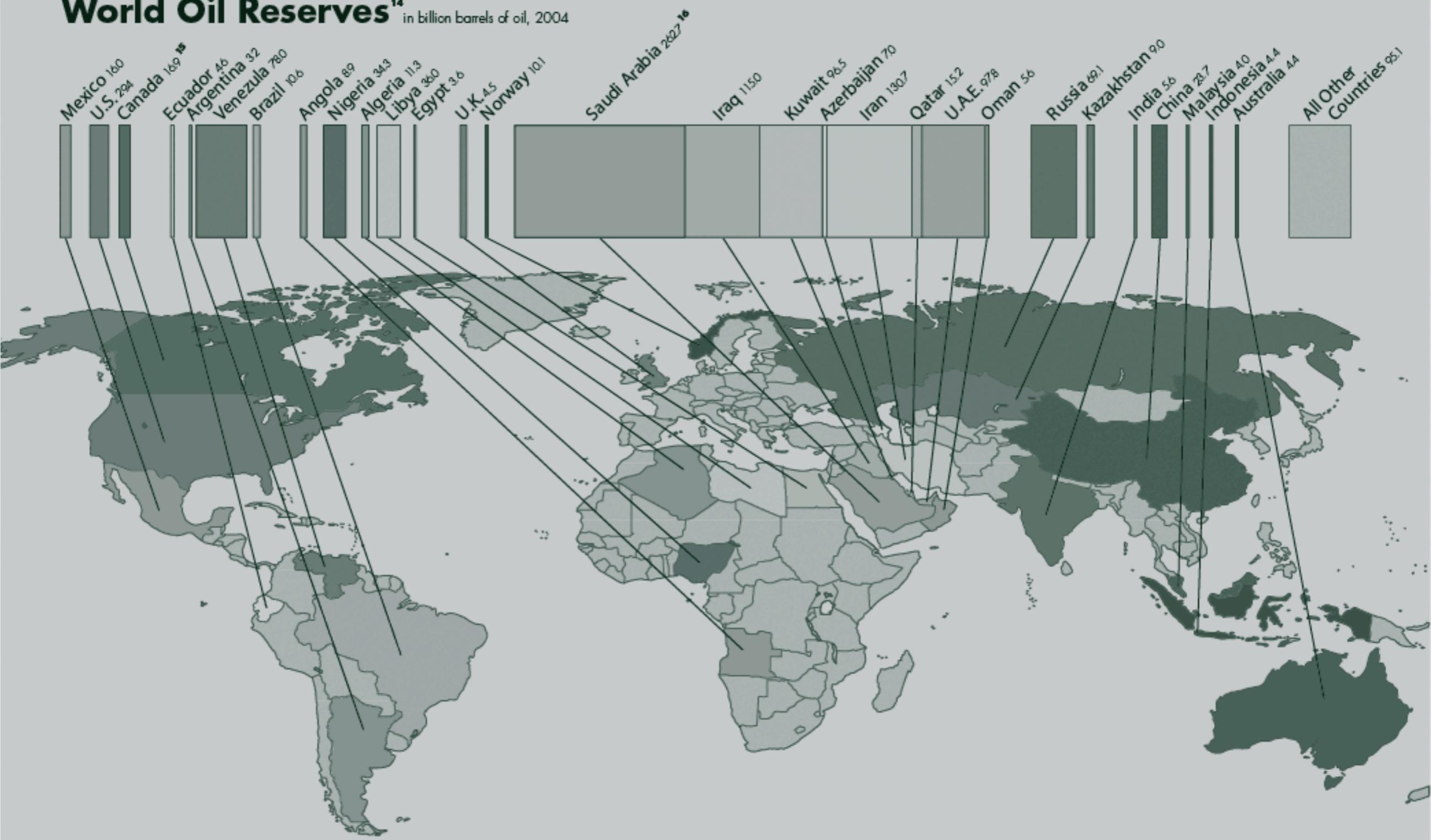
PRINCE WALEED SPECIAL

BILLIONS IN POVERTY



World Oil Reserves¹⁴

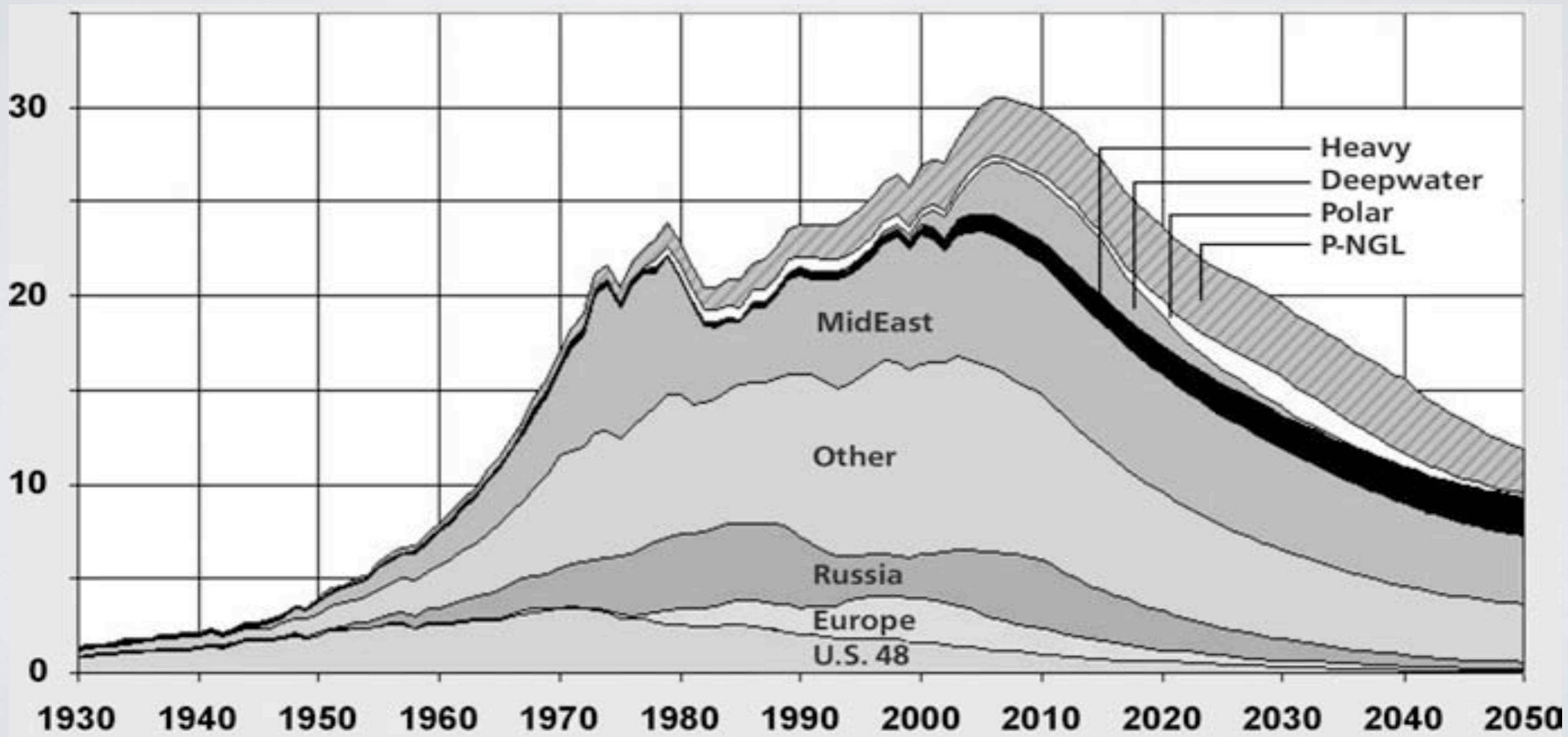
in billion barrels of oil, 2004



EMPIRE & WAR

PEAK FOSSIL FUEL

FRACKING IMPACT?

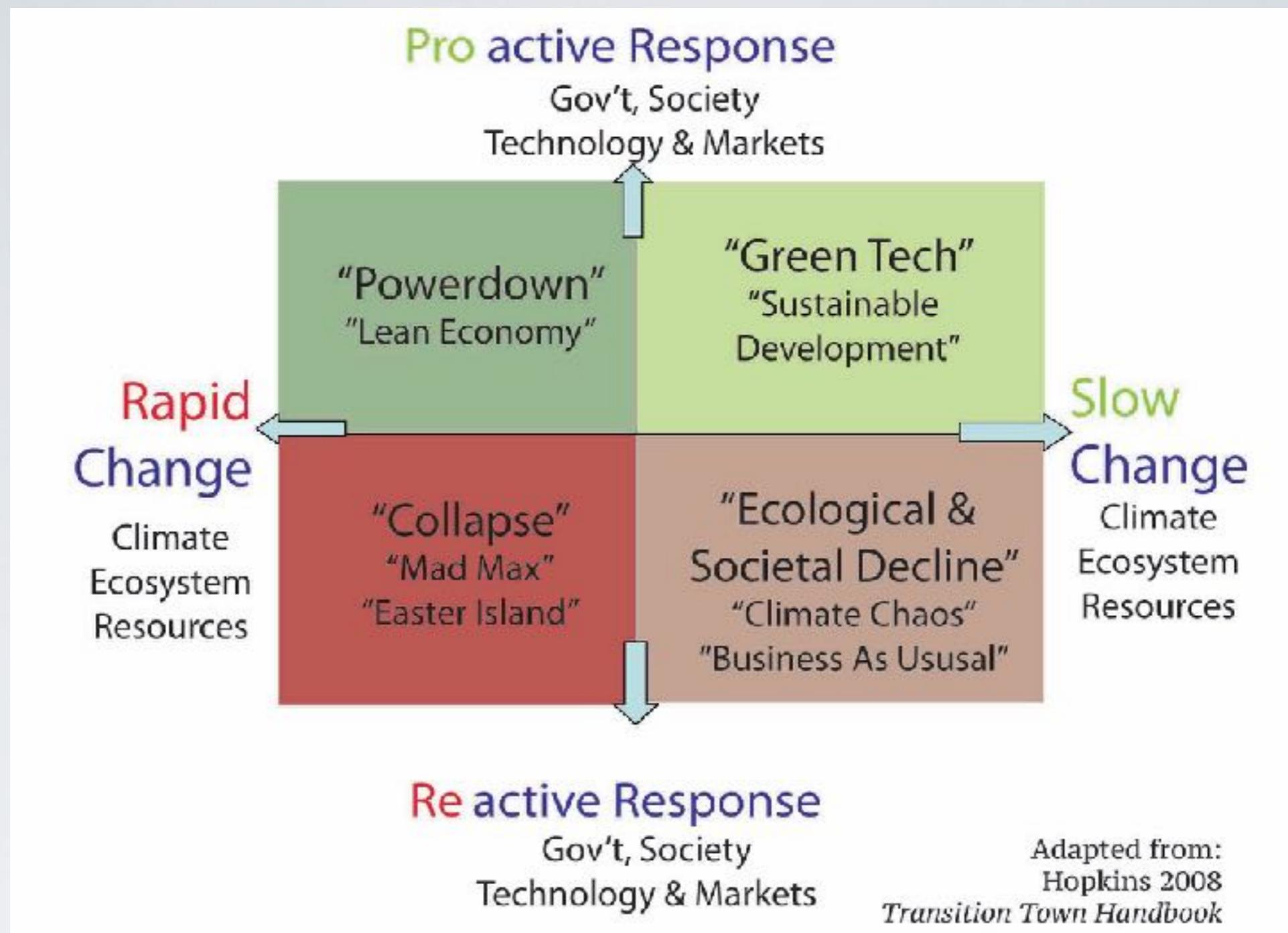


CLIMATE CHANGE



Annual Carbon Release & Sequestration

<https://www.youtube.com/watch?v=xISgmFa0r04>



THE FUTURE

Adapted from the Transition Handbook



PROJECT DRAWDOWN

THE TOP 100 LIST: LAND USE

LAND USE

- **Afforestation** 15
- Avoided Deforestation
- Bamboo
- Biochar
- Carbon Farming
- Coastal Wetland Protection
- Composting
- **Conservation Agriculture** 16
- Farm Water Productivity
- Farmland Restoration
- **Grazing & Pasture Management** 19
- Indigenous & Traditional Land Management
- **Temperate Forests** 12
- Multistrata Agro-forestry
- **Peatland Protection** 13
- Perennial Bioenergy Crops
- **Regenerative Agriculture** 11
- **Silvopasture** 9
- Sustainable Rice Production
- **Tree Intercropping** 17
- **Tropical Forest Restoration** 5
- **Tropical Staple Tree Crops** 14
- Industrial Dematerialization
- Recycled Paper
- Water Distribution Efficiency



ENERGY & BUILDINGS

ENERGY

- Biomass Energy Production
- Co-generation
- Concentrated Solar Farms
- Distributed Energy Storage
- Geothermal
- In-stream Hydro
- Methane Digesters
- Micro Wind Turbines
- Peak Demand Management
- **Rooftop Solar PV 10**
- **Solar PV Farms 8**
- Utility-Scale Energy Storage
- Waste-to-Energy
- Wave/Tidal Energy
- **Wind Turbines**

BUILDINGS

- Alternative Concretes
- Building with Wood
- Cool Roofs
- District Heating/Cooling
- Greenroofs
- Household LED Lighting
- Household Water Saving Measures
- HVAC Efficiencies (Ground & Air Heat Pumps)
- LED Lighting
- **Living Buildings**
- Retro Commissioning
- Retrofitting
- Rooftop Solar Hot Water
- Smart Thermostats

FOOD, CITIES & TRANSPORT



FOOD

- **Clean Cookstoves** 21
- Low Impact Diet
- Nutrient Management
- **Reduced Food Waste** 3

CITIES

- **Bike Infrastructure**
- Landfill Methane Capture
- **Walkable Cities**

TRANSPORT

- Airplane Fuel Efficiency
- Car Fuel Efficiency
- Carpooling/Ridesharing
- Electric Vehicles
- High Speed Rail
- **Mass Transit**
- Oceanic Freight Improvements
- Train Fuel Efficiency

BEHAVIOR & MATERIALS



BEHAVIOR

- **Educating Girls 6**
- **Family Planning 7**
- Household Recycling
- Telepresence
- **Plant Rich Diet 4**

MATERIALS

- Bioplastics
- **Commercial Recycling**
- Industrial Dematerialization
- Recycled Paper

GROUP PROJECTS

- Assigned one topic from list
- Groups of 6 made up of all disciplines
- **Research:**
 - What the topic is
 - How it's being implemented here in Cincinnati by interviewing experts around town
 - Contact your Cincinnati expert on the Subject as soon as possible
 - Calculate your Carbon Footprint for the week: Carbon footprint Calculator: <http://www.carbonfootprint.com>
 - Deliverables: Shared Friday Evening at Reception (no presentation)

Regenerative Agriculture Certification



PERMAGANIC
AUTENTICATED

We pledge to support a regenerative planet by:

- Supporting Local Farms that utilize Ecologically sound practices
- Living in walkable communities with Public Transportation
- Transitioning our Homes and Buildings to net/neutral or Positive energy creators utilizing renewable sources
- Buying used or handcrafted goods instead of new/manufactured
- Planting edible perennial landscapes modeled after nature's resilience
- Educating current and future generations about a regenerative planet and the Ethics and Principles needed to create it
- Returning the Surplus to those in need
- Assisting the needy to create a regenerative lifestyle
- Supporting Permaganic Authenticated Farms & Organizations

Refuse, Reduce, Reuse, Repair, Recycle

I Commit to do this to Ensure a Resilient and Regenerative Future for All Generations of Interdependent Life on Planet Earth

Signed

Date

Yes, I would like to stay informed about Permaganic Authenticated and its journey to assist in the creation of a Resilient and Regenerative future



First Name _____

Last Name _____

Email _____

PERMAGANIC
AUTENTICATED

EARTH CARE

PIONEER
Pioneer farms utilize one or more of the following practices

- Contour Farming that is Chemical Free (and utilizes Companion Planting?)
- Developing Healthy soils by enhancing the Soil Food Web through:
 - Activated Compost Teas
 - Employing the use of Biochar
 - Utilize Mob Grazing with livestock

EMERGENT
Emergent farms utilize the following practices (laying foundations to move towards a regenerative Agriculture)

- Must have:
 - Contour Farming that is Chemical Free and utilizes Companion Planting or Employs Keyline practices
 - Developing Healthy soils by enhancing the soil Food Web through:
 - Activated Compost Teas
 - And utilizes one or more of the following practices:
 - Orcharding
 - Agroforestry
 - Silvopasture
 - Aerial crops with perennial beds
 - Aquaponic systems
 - Poly species mob grazing

REGENERATIVE
Regenerative farms employ the following practices

- Must have:
 - Keyline planning for the whole farm
 - Polyculture Silvopasture or agroforestry with multiple layers
 - Companion planting
 - Smaller farms – livestock integrated into the system when not in production
 - Large Farms – poly species mob grazing And can employ the following:
 - Food Forest w/earthworks (minimum 4 layers with an average of 4 species in each layer)
 - Chinampas systems
 - Aquaculture modeled after diverse and stable natural systems
 - Wild Crafted

PEOPLE CARE

- Community Care: 40 hrs of Educational Outreach
- Built Environment: Energy Audit & water harvesting
- Community Care: 1000 hrs of Educational Outreach
- Built Environment: Energy Creation & water harvesting
- Community Care: 2000 hrs of Educational Outreach
- Built Environment: Off Grid or Net Yield

FAIR SHARE

- Community: Donations of 5% of Harvest to those in Need
- Ecological: 5% of land is dedicated to Ecosystem Restoration
- Community Partnering with and Organization regularly to provide reliable outlet for distribution for those in need 10% is donated to Organization
- Ecological: 25% of land is dedicated to Ecosystem restoration
 - 8% wild or managed wilds
 - 17% Regenerative Agriculture (How is this defined?)
- Community: Your farm creates & supports new structures for reliable distribution of surplus products/services, time, etc. to support the creation of a Regenerative Culture
- Ecological: 50% of land is dedicated to Ecosystem restoration
 - 10% of Wild or managed Wilds
 - 40% Regenerative Ag. (How is this defined?)

Certification

Permaculture: a "Design Science"

Permaculture's Principles & Ethics
of a Regenerative Planet:

The Three Ethics

EARTH CARE **PEOPLE CARE** **FAIR SHARE**

Principles of Permaculture Design

- Cooperation & Polarity
- Everything is Connected to everything else
- Every Function is supported by many Elements (Redundancy)
- Every element should serve many functions (multiple functions)
- Everything Gardens
- Use on-site resources
- Local Focus
- We are nature, working
- Seven Generations
- Small scale intensive systems

Holmgren's 12 Principles

- Observe & Interact
- Obtain a Yield
- Apply Self Regulation & Accept Feedback
- Use & Value Renewable Resources & Services
- Produce no Waste
- Design From Patterns to Details
- Integrate Rather than Segregate
- Use Small & Slow Solutions
- Use and Value Diversity
- Use Edges and Value the Marginal
- Creatively Use and Respond to Change
- Work with Nature, not against it
- The problem is the solution
- Infinite Yield (the yield of a system is theoretically unlimited)
- Least Change for Greatest Effect (Leverage)



PERMAGANIC
AUTENTICATED

www.permaganic.org

Clean
Cookstoves

go sun



WEEK EVENTS

- **Wednesday:**
 - Morning: Q&A
 - Evening: Local Food Potluck at Rhinegeist Brewery
- **Friday:** 4-6:30pm Reception & Sharing of Posters
- Most of All....HAVE FUN!

IF YOU WANT TO LEARN MORE...



PERMACULTURE DESIGN CERTIFICATION

DESIGNING SYMBIOSIS

Part II: SEPTEMBER 9,10,11, 24 & 25

DAAP 6090-002 Interdisp. Topics in DAAP

Course #23188

CERTIFICATION COMPLETION:

Part I : Spring Semester

ECO-LOGICALLY SYNTHESIZING:

AGRICULTURE | ARCHITECTURE | INDUSTRIAL
HORTICULTURE | PLANNING | ENERGY

For more information: TrauthBW@ucmail.uc.edu

