Carbon Sequestration and Conservation: An NGO Perspective

Lexington, KY

November 6, 2001

Carbon Sequestration and Conservation: An NGO Perspective

National Energy Technology Laboratory

November 6, 2001

Today’s presentation

- Nature Conservancy background
- Land Use Contribution to Climate Change
- Project Experience
- Key Issues and Ongoing Research

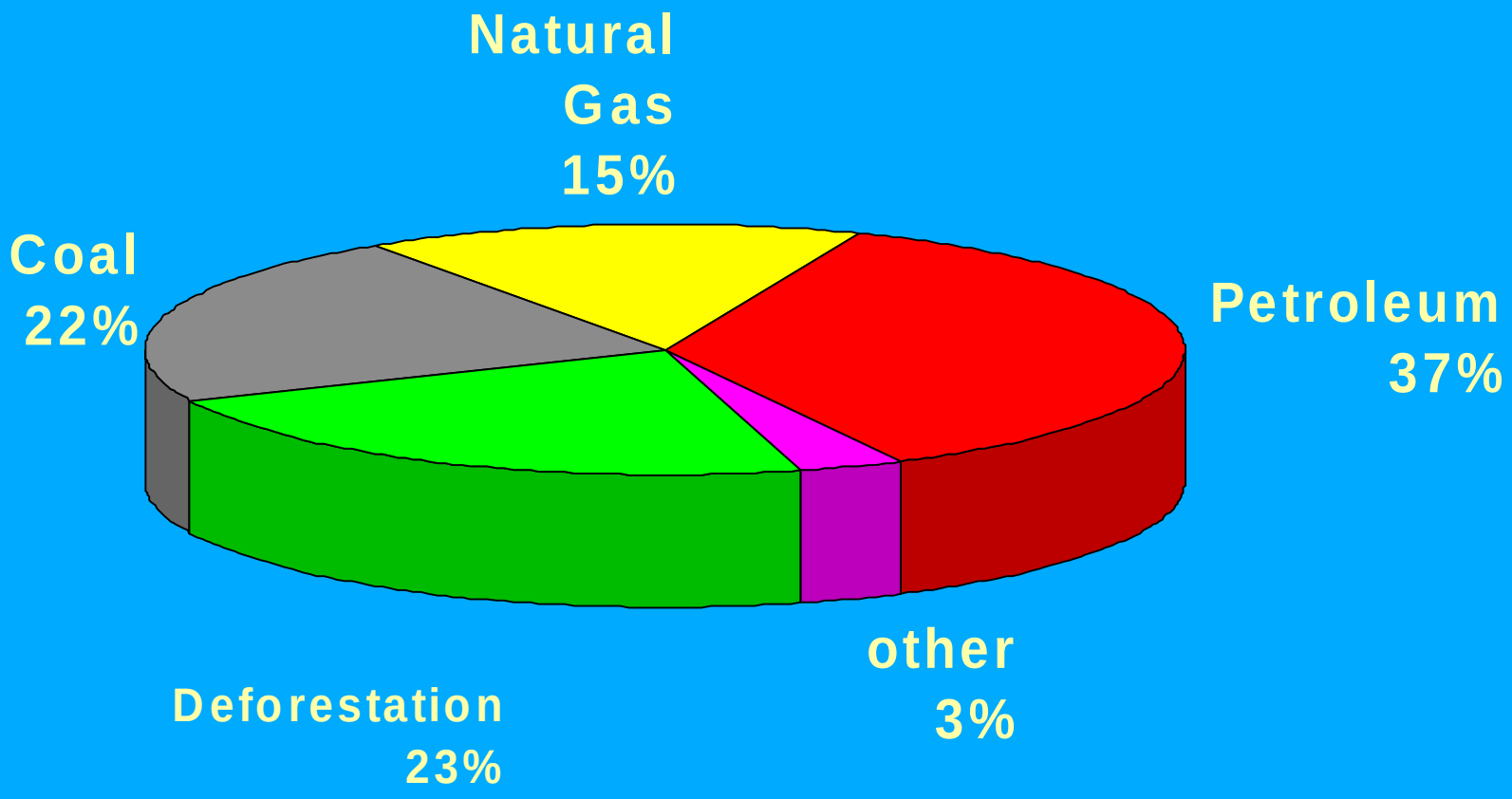
Conservancy Background

The mission of The Nature Conservancy is to preserve plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive.

The Nature Conservancy

- Largest private conservation organization
- Founded in 1951
- Conserved more than 12 million acres in U.S., and millions more in Latin America, the Caribbean, and Asia/Pacific
- 1.2 million members
- $786 million cash flow in FY2000

Global Carbon Dioxide Emissions



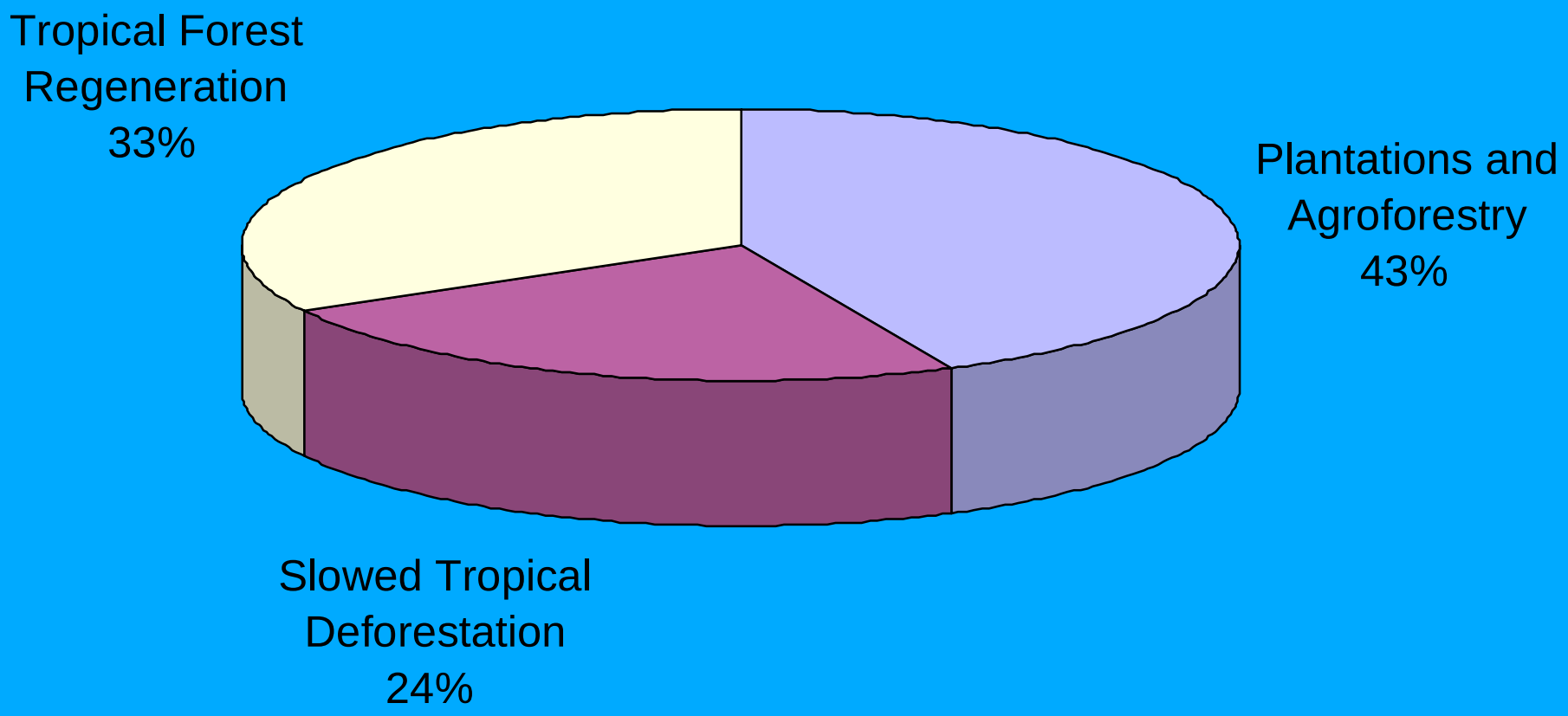
Primary Land Use Sequestration Options

- Reforestation/Afforestation
- Avoided Deforestation
- Agricultural and Grasslands

IPCC estimate of C sequestration and conservation potential between 1995 and 2050 (Global)

Total = 60- 87 Gt C

12-15% of cumulative fossil fuel emissions



Other Potential Environmental Benefits of Carbon Projects

- Biodiversity conservation
- Flood and storm protection
- Watershed protection
- Prevention of soil erosion
- Ecotourism and other opportunities

Conservancy Climate Action Projects

	Location	Cost	Funders
Rio Bravo	Belize	$5.6 million	WEPCO, 3 other utilities, 2 oil co.
Noel Kempff	Bolivia	$9.6 million	AEP, BP, Pacificorp
CSW	Brazil	$5.4 million	CSW (now AEP)
Atlantic Rainforest Restoration	Brazil	$10.0 million	Auto company
Antonina Rainforest Project	Brazil	$3 million	Oil company
Midwest restoration	Ohio/Indiana	$500,000	Cinergy

Rio Bravo Project - Belize

- Outbid agricultural group for 35,000 acre parcel of rainforest
- Land is owned/managed by Belizean NGO - Programme for Belize
- Includes certified sustainable forestry program
- Habitat for 330 species of birds, jaguar, other rare plants and animals

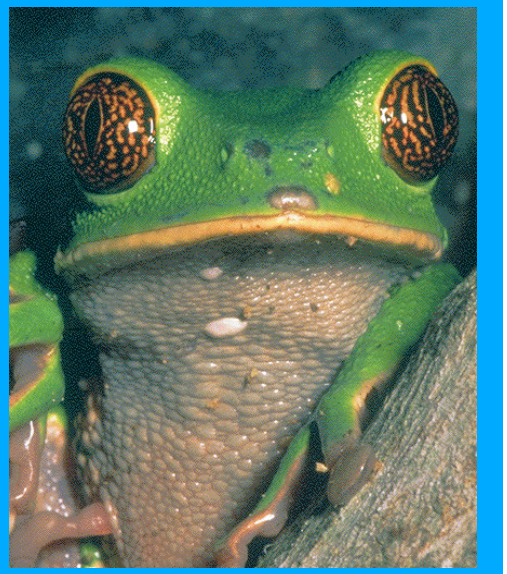
Rio Bravo project data

- Total project cost: $5.6 million
- Estimated carbon offsets over 40 years: 2.4 million tons
- Division of carbon offsets: 50 percent to Programme for Belize/50 percent to investors
- Project status: Approved and registered under joint implementation program

Noel Kempff Project Bolivia

- Retired forest concessions on 2 million acres and added to national park
- Land is owned by Bolivian government/Managed by Bolivian NGO - Fundación Amigos de la Naturaleza
- Includes funding for economic and community development
- Habitat for 620 bird species, 130 mammal species

Noel Kempff Project Data



- Total project cost: $9.5 million
- Estimated carbon offsets over 30 years: 7 million tons
- Division of carbon offsets: 50 percent to Government of Bolivia, 50 percent to investors
- Project status: Approved and registered under joint implementation program

Atlantic Forest Project - Brazil

- Purchase 20,000 acres of water buffalo ranches and restore them to natural forest
- Provide funding to local communities for sustainable development
- Project implemented by Brazilian NGO - SPVS
- 15 globally endangered birds in project area

Atlantic Forest - Project data

- Funded by $5.4 million one-time investment by Central & Southwest Utilities
- 1 million tons of carbon sequestered over 40 years through protection and reforestation
- Strong support from Brazilian state government
- May be submitted to Clean Development Mechanism

Additional Project Activity

- Two new projects with companies in Latin America - $10 million and $3.3 million
- Cinergy is funding $500,000 reforestation project in Indiana/Ohio
- Project planning work on-going for new international and domestic projects
- MOU between TNC and Department of Mines Minerals Energy in Virginia
- Total raised is over $30 million since 1998

Conservancy Project Investors

- American Electric Power
- PacifiCorps
- British Petroleum
- General Motors
- Wisconsin Electric
- Suncor
- Canadian Occidental
- Cinergy
- Detroit Edison
- Utilitree

Project monitoring and verification

- Projects all include on-the-ground measurement with hundreds of sample plots
- 20 percent of Bolivian project costs are for monitoring
- Monitoring technology being transferred to local NGO staff

Potential Environmental Concerns

- Sequestration projects may be bad for biodiversity
  - conversion of natural vegetative communities to plantations (e.g. Grasslands to tree plantations)
- Sequestration may have happened anyway, or be temporary and fail to bring long-term reductions in GHG concentrations
  - natural disasters
  - carbon storage loss due to climate change
- Sequestration may be a significant distraction away from fossil fuel emissions reductions
  - will slow development of clean energy technologies

Dealing with the Concerns: Bolivia

- Additionality: Project would not have occurred without sequestration funding.
- Leakage: Logging companies were purchased, preventing movement. Sustainable development activities promoted.
- Baseline: Extensive data on deforestation trends and logging practices in project area
- Permanance: Land is a Bolivian National Park and project has permanent endowment.

Key principles for rules

- **Ecosystem Protection -** Rules must aim to prevent undesirable impacts on ecosystems.
- **Measurability -** Reductions and removals must be measurable and verifiable.
- **Baselines and additionality -** Reductions and removals must be additional to those that would have occurred otherwise.
- **Leakage -** Offsite emissions caused by the project must be avoided or properly accounted for.
- **Duration -** Projects must provide a permanent reduction of greenhouse gases or otherwise account for the time that the carbon is kept out of the atmosphere.
- **Sustainable Development -** Projects must contribute to the sustainable development of the host country.
- **Proportionality -** The number of credits available from land use change projects should be proportional to the buildup of greenhouse gases attributable to land use change.

Key Research Topics

- Improved and lower cost measurement and monitoring techniques, including use of remote sensing
- Improved methodologies for estimating project baseline and leakage
- Standardized methodologies and carbon modeling
- New project feasibility analyses

Principal Partners

- Winrock International Institute for Agricultural Development
- American Electric Power, General Motors
- Los Alamos National Laboratory
- Others

Summary

- Land use can play an important role in addressing climate change, especially in the short-term
- Properly structured land use projects can also have significant additional environmental benefits.
- To realize full potential of land use to affect climate change, key issues must be addressed.
- Ongoing work with NETL will help to provide standardization, better understanding of potential, and reduction of costs.

Noel Kempff National Park - Bolivia