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CLIMATIC CHANGES:
THE GREENHOUSE EFFECT vs A NEW ICE AGE

CO_2 & CLIMATE

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The Earth Regeneration Society submits the following context for discussing the central global environmental issue shaping life on this planet: the earth/atmosphere balance now accelerating into the next glacial period and the need by human society for an emergency counter program of soil, forest and energy work.

(1) We are surrounded by extremes or historical all time records regarding certain lake levels, flooding, cold temperatures, tornadoes, earthquakes, shorter growing seasons, crop damage, deteriorating and dying forests, drought and heat spells in specific areas, cloud cover in relatively northern latitudes, and even space shuttle disasters (Cape Canaveral: on one of Florida's coldest mornings ever recorded). We see these events recorded almost daily in the U.S. and international press.

(2) We see the world's atmospheric carbon dioxide level rise significantly in the portion of the 1800s when European and U.S. forests were heavily cut, then again in the 1900s with forest cutting, soil mineral and trace mineral reduction, and increasing forest fires in the dying (drier and less resistant) forests.

(3) We observe that the additional CO/2, additional greenhouse effect in the lower latitudes, results in record cloud coverage (such as Chicago area) and northern hemisphere snow cover (18% more in 1985 than the previous maximum, 1973). What goes up in the warm latitudes (near the equatorial belt) comes down in the higher latitudes. The additional warming and evaporation under the more direct sun's rays leads into the additonal cooling in the cloud and snow areas. (It is an accelerating circle, not one aspect vs. another.)

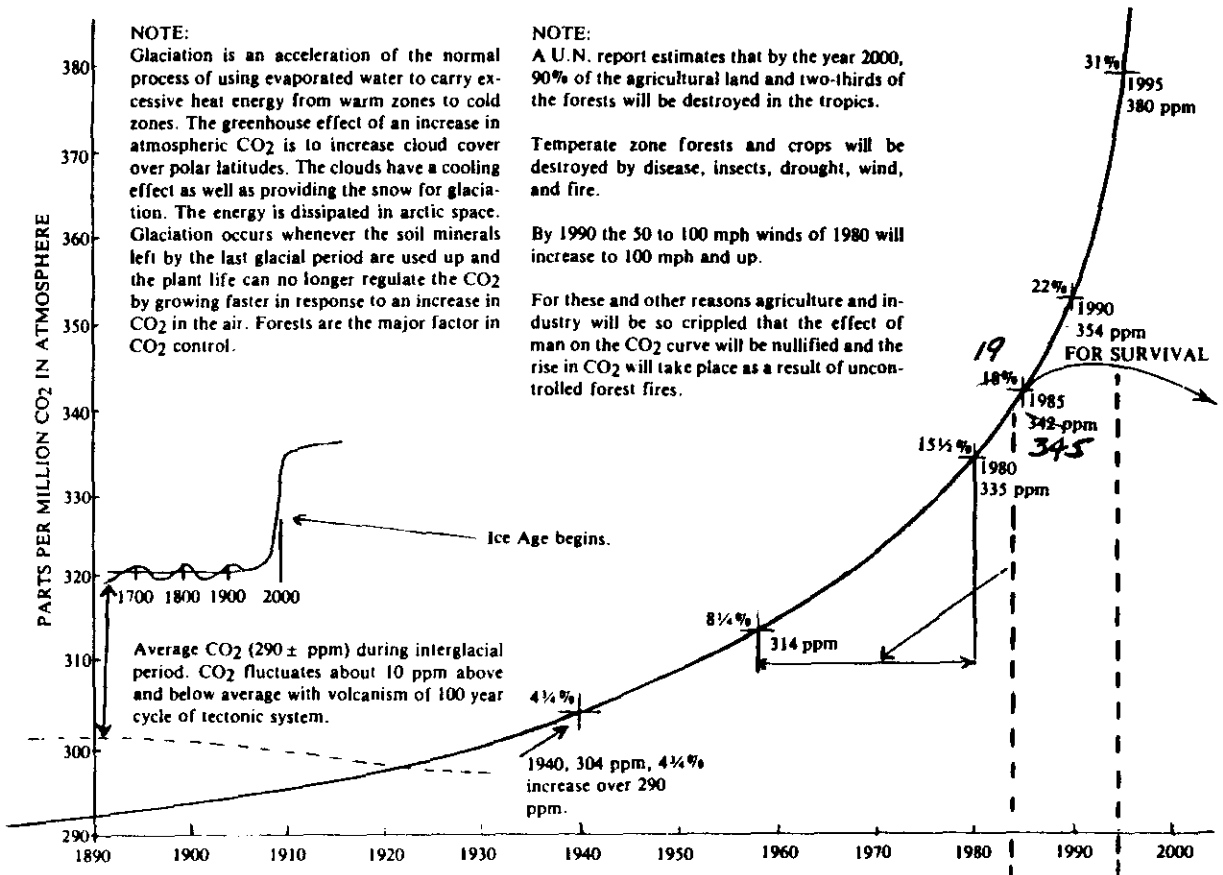
(4) Only in the last 20 or 30 years have we seen major advances in knowledge of tectonic plates, glacial cycles (from around 70,000 to 130,000 years), ice volume and CO/2 fluctuation (the maximum at the time of the last turn around from an inter-glacial into a glacial period was somewhere near the 345 parts per million we now have).

(5) We have seen how remineralized soil (good types of rock dust) in Europe, Australia, New Zealand, the U.S., and probably other places, has produced healthier plants, animals, people -- and has almost completely removed the need for pesticides in many cases. Consider what the elimination of such massive amounts of toxic substances means to consumers, and why it is that the Farm Workers of America are so supportive of an earth regeneration program.

(6) We have known for at least ten years that appropriate solar thermal electric power plants can economically replace nuclear and oil burning plants. A multi-modular solar plant of this type is now working near San Diego, California (5 megawatt plant built by LaJet Energy Company, Abilene, Texas). An environment/employment program of the scale needed was outlined in our paper to the Audubon conference at Amherst, MA, August 1-6, 1985, repeated at two workshops of the 1985 annual conference of the World Future Society, and included in the papers presented May 1986 in Philadelphia at a symposium of the Society for General Systems Research (meeting in conjunction with the AAAS). The areas of labor and material concentration are soil, forests, conservation, and alternative energy technology development (not nuclear -- no more radioactive waste production and on-going accidents). The central equation for planners at all levels will logically become: net CO/2 effect, in a region, the changes over a coming planning period (usually a year), and the new level of annual net CO/2 increase or decrease.

(7) We are in a process that literate human society (six thousand years or more) has never faced -- stabilizing climate with a human conducted counter program. The maximum type earth regeneration program, worldwide, with U.S. and Canadian participation, may minimize the loss of life (possibly 20% or less of the world's present population) and show us in seven to ten years whether or not we can avoid the point of no return. Then, we would all be at risk. Should we not make an all out best effort?

Dollar figures provided to illustrate the magnitude of the program: soil remineralization, reforestation and alternative energy source development. CO/2 Curve taken from "The Survival of Civilization" by John D. Hamaker and Don Weaver.



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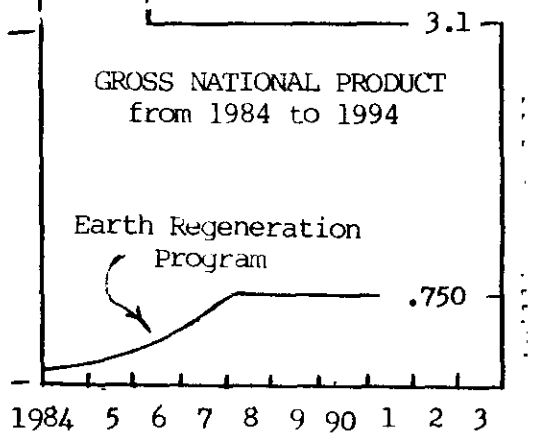
CAN WE STOP THE INCREASE OF CO/2 IN TIME?

1984-87 Expansion of physical work.

1988-93 Maximum program at 25% of GNP.

See expanded time scale on right.



Earth Regeneration Program

***Stop Deforestation.
***Stop burning fossil fuels, and find non-nuclear alternatives. Emphasize conservation.
***Reforest the U.S. portion of the world rate of 500,000 square kilometers of net growth per annum for the next 30 years.
***Remineralize the soils of the earth to restore the health of the soils, soil organisms and then the trees.

U.S. Contribution to Global Program

Required U.S. Annual Expenditure Rate
Billions of Dollars

Transfer military	320
Other Federal, partly available due to less welfare and unemployment costs	90
Federal	410
Utilities	190
Other, private industry sectors	150
Total	750

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Table 1

U. S. EMPLOYMENT PLAN — EARTH REGENERATION PROGRAM
Employment by Industry Group

	Employment, Thousands of Jobs				
	(1) 1984 Actual	(2) 1989 Estimate	(3) Trans-fer	(4) New Jobs	(5) Total Cols. (2) to (5)
Agriculture	2 958	2 920		540	3 460
Remineralization			1 000	5 000	6 000
Forestry, and fisheries	80	90			90
Reforestation			500	2 400	2 900
Mining	657	650	<300>		350
Rock for remineralization			100	50	150
Manufacturing	19 962	20 290	500	1 130	21 920
Durable manufacturing	11 858	12 050	500	690	13 240
Nondurable manufacturing	8 104	8 240		440	8 680
Transportation, communication and utilities	5 636	5 720		420	6 140
Transportation	3 209	3 230		180	3 410
Communications	1 397	1 440		170	1 610
Public Utilities	1 030	1 050		70	1 120
Wholesale and retail trade	23 976	24 200		1 330	25 530
Finance, insurance, and real estate	6 291	6 400	<100>	340	6 640
Services	24 296	24 920	<600>	1 320	25 640
Construction	5 927	6 100	1 000	4 820	11 920
Government enterprises	1 485	1 510		80	1 590
Special industries	1 615	1 700		90	1 790
Sub-Total	92 883	94 500	2 100	17 520	114 120
Government (federal, state and local)	15 760	16 400	<100>	1 890	18 190
Foreign participation				500	500
Military	2 100	2 100	<2 000>	90	190
Total	110 743	113 000	——	20 000	133 000

1984 Actuals (down to Sub-Total) are taken from the Bureau of Labor Statistics, June 1985, 155 sector tab run "Time-series date for input-output industries — output, price, and employment (1972-SIC definitions). The estimates are those of the author.

The above U.S. employment plan is proposed to become part of an emergency international effort to halt the rise in atmospheric carbon dioxide and slowly bring it back to an equilibrium level (from 345 parts per million to around 280 ppm in the earth's atmosphere) and maintain a livable earth-atmosphere balance. We have the numbers, the technology, and the education to handle the problem this time. We did not have these assets over 100,000 years ago at the last turn around into glaciation conditions.

New employment of 20 million jobs includes 2m to repair damage from increasing weather intensity, 12m to be employed on soil, forest, and energy work within approximately four years from now, and 6m necessary supportive indirect labor throughout the rest of the economy.

Transfer of workers from less to more essential jobs means reduction in coal mining and petroleum (fossil fuel), services, military, and government (federal, state and local) sectors offset by increases in remineralization of forests and agricultural land, reforestation, stone quarrying (for remineralization), durable manufacturing, and construction. Estimate: 3.1 million jobs.

Remineralization means gathering or grinding, storage (as necessary), loading, transporting, spreading, plowing in (for some agricultural uses). This refers to a very large number of big and small sources of rock for rock dust and widespread forest and agricultural application. This is highly labor intensive. 6 million jobs.

Reforestation , the rebuilding of forests, is now taken to mean the planting of many species of trees most natural to the habitat in each region (not just one species for lumber), with the goal of fast growing trees to take carbon out of the atmosphere. It means planting a combination of trees, shrubs, grasses to best develop the whole region. It means careful analysis of the conditions of each region. It means widespread involvement in federal lands, state lands, each county and every part of every city as both possible and practical. 2.9 million jobs.

Construction includes large scale damage repair from storms, hurricanes, flooding, fires, and earthquakes. 1 million jobs.

Energy conservation and development of alternative energy technology (solar heating and thermal electric plants, biomass for alcohol fuel and power plant operation, wind electric, hydrogen, and other -- not nuclear, no addition to radioactive contamination). 4.8 million jobs.

Foreign participation means working through the United Nations channels, as part of international teams, to expedite and help bring about the most effective earth regeneration in every region of the world. Regional regeneration plans are required. Above all, this means maximizing reforestation in temperate and tropical zones. Industrialized countries will be working more effectively with third world countries or we are all at risk. They regrow their forests or we too are out. The benefits of earth regeneration in its broadest sense far outweigh the short run returns to military-industrial corporations or companies involved in undesirable fossil fuel burning and destructive forest and soil practices.

Military. Reassignment of resources and duties as part of a basic and essential international arrangement.