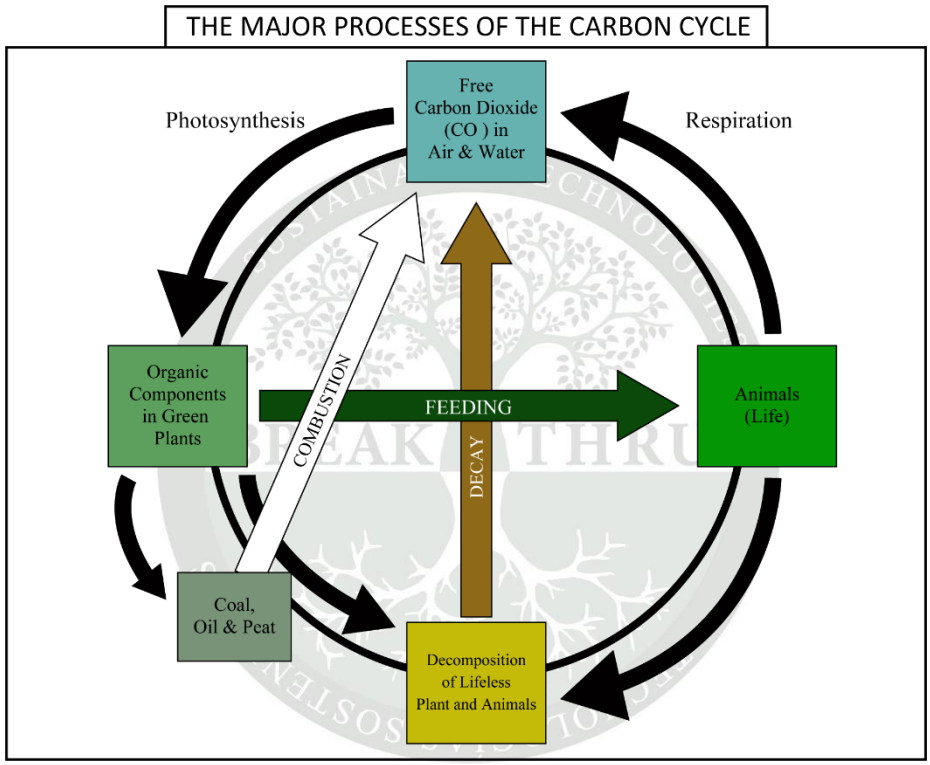
“CAPTURING CARBON AND FIGHTING GLOBAL WARMING?”

Life forms on earth interact with the planet, causing four major cycles. These four sequences balance each other and go into a dynamic equilibrium. The Atmospheric, the Hydrological, the Geological and the Biological Cycles interact and are dependent on each other. When one is affected, the others form a new equilibrium. Once the equilibrium is static, the biological cycle has ceased to exist. An excellent example of how changes occur is the study of Atmospheric Rivers (AR), in West Coast of North America or record breaking, rain, snow fall, drought conditions or high or low temperature that are also happening.

According to the experts, to fight global warming one must immobilize or transform the carbon dioxide gas into other forms to reduce the greenhouse effect. Assimilation of carbon is one of the oldest biochemical phenomena; it has been going on since the origin of life. The largest amounts of elements of all living matter are carbon, hydrogen, oxygen and nitrogen. In fact 97% of the mass of all living organisms comes from the air, and 3% comes from the soil. The average human is approximately 18% carbon whereas trees and plants consist of about 51%.

The discussion of the carbon dioxide (CO2) cycle in this article concentrates on how it is transformed, the effects it has on the environment and how management can improve environmental conditions. The three main areas of initial capture of CO2 will be outlined. The first is the CO2 form in water plus the conversion of phytoplankton and zooplankton immobilization of CO2 into organic matter. The second is conversion of carbon dioxide of trees into their mass. The third is the pathway of CO2 in non-woody plants like grasses through soil organic matter.



The carbon energy cycle begins with the process of photosynthesis capturing electrons from sunlight, combining and transforming elements into energy packets to provide building blocks for growth and reproduction. Upon death this captured energy is filtered through a pyramid of organisms back to the original CO^2 gas in the atmosphere. Exceptions are in the deep ocean cycles and long chain hydrocarbon reduction.

The ammonia-oxidising archaea, such as *Nitrosopumilus maritimus*, degrade CO^2 and N_4 (ammonia) further into oxygen and nitrates NO3. The long chain hydrocarbons reduction in by *Candidatus methanoliparum* into methane gas, from unused heavy oil or oil by product waste, is another contributor to the greenhouse effect manufacturing methane gas.

It is estimated that on a yearly basis 1.25 trillion tons of carbon compounds are produced annually in the oceans. Additionally, there is approximately 750 billion tons of atmospheric carbon dioxide produced. However, with green plants absorbing only 220 billions tons of Carbon Dioxide annually there is an abundance of carbon energy that must be immobilized before returning to the CO2 gas form. Of the 1.25 trillion tons of carbon compounds produced in the ocean the largest addition is from dissolved organic matter in the form of Calcium Carbonate leached from land, then deposited in the ocean depths as limestone, which is a secondary method the planet immobilizes carbon. **Essentially, the real outstanding balance of carbon is 1.78 Trillion lbs per year.** This is not all deposited as limestone in the ocean depths but much goes through a biological cycle affecting the intensity of storm patterns.

For those that are interested in further reading, refer to the Gaia Theory developed by James Lovelock and in more detail within the article INSTAGrowth Balance System & General Environmental Cycles. This outlines the erosion and ultimate depositing of the carbon dioxide in the ocean depths and the massive compounding problems that occur when in a dissolved state in the oceans. Lovelock predictions are occurring today with incredible accuracy.

The second and much more beneficial immobilization is that of enhancing plant growth. It is known that during photosynthesis, trees and other plants absorb carbon dioxide and give off oxygen, being an integral part of the natural atmospheric exchange cycle on Earth. However, because of the general deforestation over the last two hundred years, there are too few trees to fully counter the increases in carbon dioxide. Since a single tree will absorb approximately one ton of carbon dioxide during its lifetime it is imperative that new trees are planted and growth encouraged. With the use of the InstaGrowth products there is phenomenal production. Usually, 6-7 years growth is seen in a single year with trees maturing within 10 years. Average populations of trees are between 1,000-2,500 per hectare. So an average forest of 2,000 trees will store 2,000 tons of carbon in 6-7 years with the INSTAGrowth protocol. With the use of the Breakthru Technology there is phenomenal production. This in itself combined with proper management, harvesting and replanting of trees, have a multiplying effect of sequestering at least seven times the amount of carbon per acre .

The third is the immobilization of carbon within soil organic matter (SOM). There are several compositions of SOM and they can be classified within soil types. This ranges from the 100% organic matter of the different categories of peat down to the minimal amounts in deserts or developing soils. In the cultivated soil types, being originally savanna or grassland environments, well balanced soils will average 8% SOM. Continuous commercial farming reduces SOM to an average of 2%-3% in the top 15,24 cm (6").

NOTE: For every 1% soil organic matter in the top 15.24 cm there is approximately 30 tons per hectare of carbon.

Breakthru Technology increases SOM 46 cm (18") deep over a 4 year by 5% or 1080 tons of SOM per hectare and when grasses or legumes are planted as a nursery with either cultivated crops or with trees. Compounding results are seen, with the total sequestered carbon, when both the grasses and trees are planted together, trees are harvested, and the cycle is repeated.

Taking the combined airable hectares of Argentina, Australia, Brazil, Canada, China, India, Russia and the United States there is approximately 760,000,000 Ha of cultivated land. If these countries increased an average of 0.075% SOM in the top 15.4 cm of land per year this would equal over 1.71 Trillion lbs of carbon being sequestered each year from micro and macro organisms. Man-made chemicals upset the natural production of SOM.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CHEMICALS
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