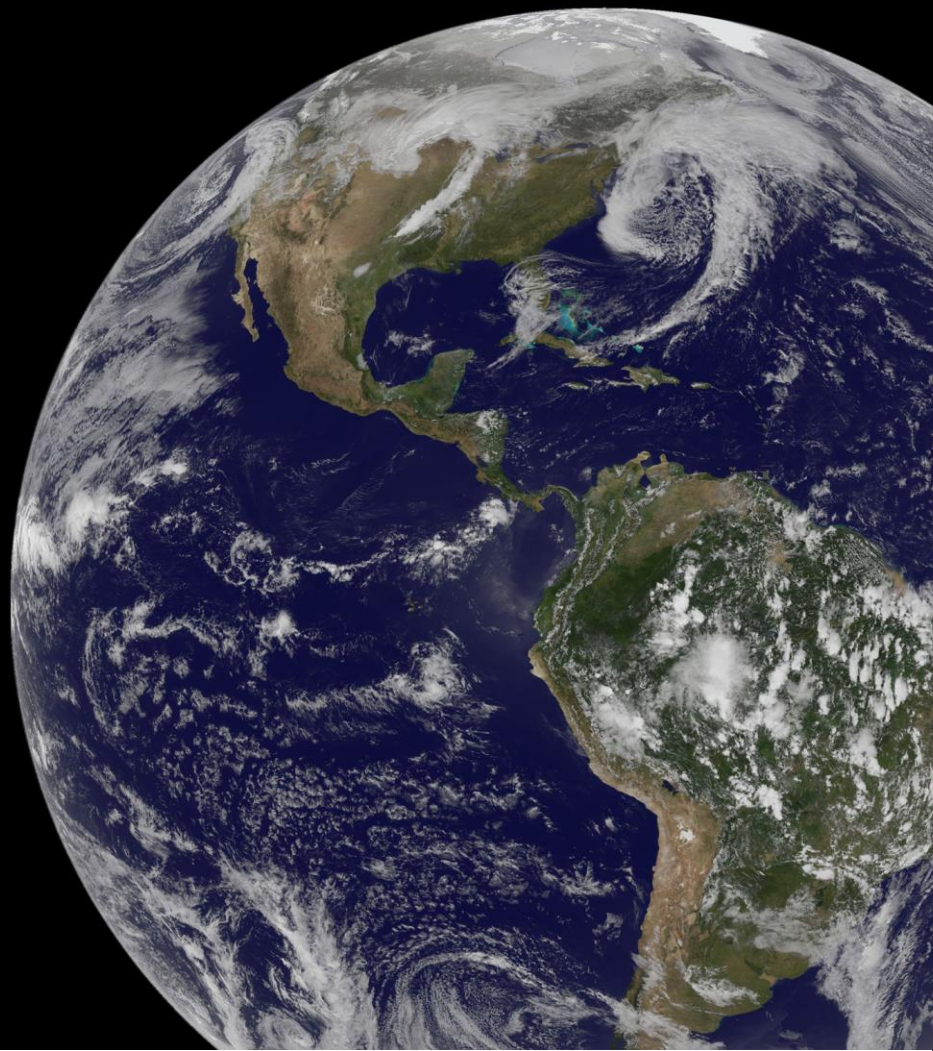
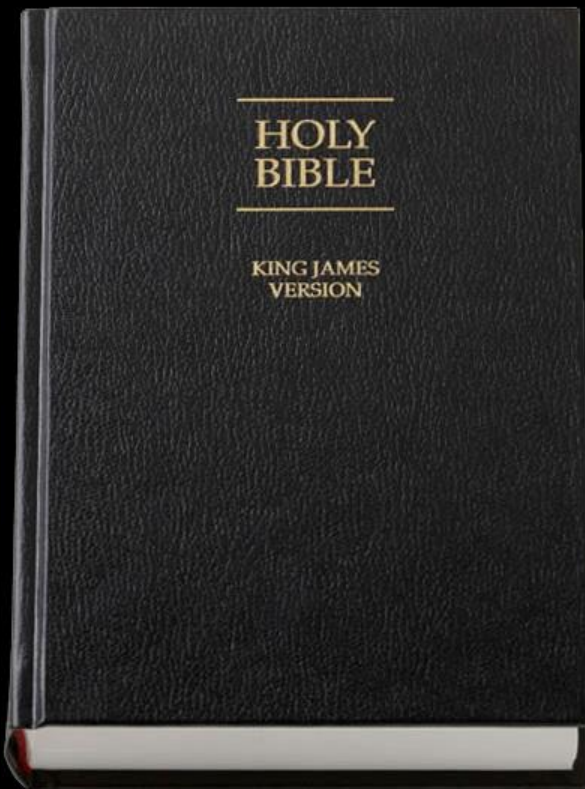


Stewardship and Sustainable Development in a World of Rising Atmospheric CO₂



A Biblical Perspective on Humanity's Relationship to the Biosphere

Craig D. Idso, Ph.D.

Center for the Study of Carbon Dioxide and Global Change

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Introduction

We've all seen the concepts acted out on television, heard them reported on the radio, and read about them in newspapers and magazines. We even get them preached to us by our children when they come home from school. *Conserve energy. Carpool. Use less water. Recycle. Save the planet.* These and other such slogans have become increasingly popular in recent years, as more and more people have become convinced that our world and its life-sustaining support systems are seriously threatened by the ever-increasing numbers of our species. As a result, protecting the environment has become a key consideration in almost all that we do; for it is put forth as a self-evident fact that being good to the earth is the only way to ensure that our children and grandchildren will inherit a world that provides equal or greater opportunities and resources than that in which we now live.

Much of the success of the environmental movement that has increased our awareness of these issues can be attributed to the invoking of two principles that derive their strength from powerful altruistic motivations: stewardship and sustainable development. These principles teach us that we must be responsible in our use of the earth. We should respect all life—human, animal, and plant—and support only that development that does not compromise the needs of future generations.

The concept is simple: do what is right. But a knowledge of *what* is right is not as readily acquired as is the motivation that prods us to action. Especially is this so with respect to complex environmental phenomena that operate over the entire globe and involve both physical and biological components that interact on a variety of different time scales. We may desperately desire to do the right thing, but in our rush to “save the planet,” we could easily do the wrong thing; for we possess but a few pages of the complete Instruction Manual for operating Spaceship Earth in a manner that insures the safety of its crew and passengers. And those pages that we do possess are sometimes difficult to read.

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Equally perplexing are the dilemmas created by conflicts of interest. Consider, for example, the consequences of cutting down a section of forest in Brazil. The habitats and lives of numerous plants and animals could be destroyed by this action, with some species possibly even being driven to extinction. The harvested wood, on the other hand, can be used by people for fuel, shelter, and other products; while the cleared land may provide a base for agriculture or industrial development.

Which is the more important use of the land? Does one function have priority over the other? How should the needs of mankind be weighed against the needs of other species? Are plants and animals endowed by their Creator with certain “inalienable rights,” as is man? Indeed, can man, as one of the parties to the conflict, even presume to adjudicate in such matters? But if not man, who?

For a sizable segment of earth's population, moral issues are not only settled, but actually defined, by the *Bible*. Comprised of writings dating back thousands of years, this sacred book serves as an ethical compass for people of numerous faiths. It records historical events that reach back to the world's beginnings, and contains prophetic writings that foretell the world's future. But does the *Bible* cast any light on society's stewardship role with respect to the environment and the other forms of life with which we share the planet? This question must be seriously considered; for if it does, that light would be incredibly important, as it would have to be acknowledged as coming from God Himself. And who is better qualified to settle differences among earth's many life forms than He who created and placed them here?

Stewardship and the Preservation of Species

"The earth is the Lord's and the fullness thereof; the world, and they that dwell therein." This opening verse of the Twenty-fourth Psalm clearly identifies to whom the earth belongs, with all its inhabitants. Everything is God's, for as He declares in Isaiah 45:12, "I have made the earth, and created man upon it: I, even my hands, have stretched out the heavens, and all their host have I commanded." Consequently, in all things pertaining to the earth and its myriad forms of life, we are not at liberty to create our own ethos without looking to God—the Great Proprietor to whom all things belong—for counsel on how we should comport ourselves.

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As the offspring of Deity, man hold's pre-eminent rank over all other of God's creations. This relationship was initially set forth on the sixth day of creation when God said "Let us make man in our image, after our likeness: and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth" (Genesis 1:26). Further evidence of mankind's high estate is evident in God's command to us to *subdue* the earth (Genesis 1:28), and in His declaration that "every herb bearing seed,

which is upon the face of all the earth, and every tree, ... to you it shall be for meat” (Genesis 1:29).

Centuries later, humanity’s preeminence among God’s creations was forcefully reaffirmed, when the Lord said to Noah that the fear of man “shall be upon every beast of the earth, and upon every fowl of the air, upon all that moveth upon the earth, and upon all the fishes of the sea; into your hand are they delivered,” adding, in fact, that “every moving thing that liveth shall be meat for you” (Genesis 9:2-3). But in giving this absolute power to man, God clearly did not intend for it to be used indiscriminately; for just as He declared that “whoso sheddeth man’s blood, by man shall his blood be shed” (Genesis 9:6), so also did He warn Noah and his posterity that the “blood of your lives will I require; at the hand of every beast will I require it” (Genesis 9:5). Man was truly free to utilize every component of the world about him—even to the point of taking all non-human life—but only for his justifiable *needs*.

As sovereign of the earth, then, man’s powers and rights are great indeed; but where much is given, much is expected. When God placed Adam in the Garden of Eden, for example, He instructed him to do much more than merely use the things there for his own enjoyment. He told him “to dress it and to keep it” (Genesis 2:15), or in other words, to take proper care of the Garden and maintain it. Hence, from the very beginning of man’s appearance on the scene, he was made a *steward* over all of God’s earthly creations, to care for and sustain them.

Perhaps nowhere in sacred writ is mankind’s stewardship role as a protector of the planet’s biodiversity more clearly presented than it is in the story of Noah and the Deluge. When God surveyed the work of his hands at that point in earth’s history, He determined that “all flesh had corrupted his way upon the earth” (Genesis 6:12) and would have to be destroyed, except for Noah, with his family, who the Lord found to be “a just man and perfect in his generations” (Genesis 6:9).

The Lord spoke to Noah and told him what was about to occur: “behold, I, even I, do bring a flood of waters upon the earth, to destroy all flesh, wherein is the breath of life, from under heaven; and every thing that is in the earth shall die” (Genesis 6:17). God then instructed Noah to make an ark, wherein he and his wife and their sons and their sons’ wives might be preserved alive, adding that “of every living thing of all flesh, two of every sort shalt thou bring into the ark, *to keep them alive with thee,*” noting that each pair “shall be male and female” (Genesis 6:19, italics added). Then, upon their surviving the flood, the Lord commanded Noah to go out from the ark and to “bring forth with thee every living thing that is with thee...*that they may breed abundantly* in the earth” (Genesis 8:17, italics added), which was essentially the same instruction He gave to Noah and his sons—“Be fruitful, and multiply, and replenish the earth” (Genesis 9:1). Hence, there would appear to be little doubt that God delights in the preservation of *all* the works of His hands and that He expects man, as His steward, to take an active role in maintaining their presence upon the earth.

Sustainable Development in Ancient Israel

Just as God gave man dominion over all other life on the face of the earth, so also did He give him license to utilize all of its natural resources. Perhaps nowhere is this freedom more evident than in the building of the great temple that was constructed under the direction of Solomon,

King of Israel, in accordance with the word of the Lord to his father, David: “Thy son, whom I will set upon thy throne in thy room, he shall build an house unto my name” (1 Kings 5:5).

The first act of Solomon in this matter was to forge an alliance between himself and Hiram, King of Tyre, so that he could acquire cedar and fir trees from Lebanon, along with great and costly stones for the foundation of the building. This undertaking was no small feat; for it involved the efforts of 80,000 “hewers in the mountains” and 70,000 “that bear burdens” (1 Kings 5:15). And when the framing of the edifice was complete, Solomon overlaid the interior of the entire house with a covering of pure gold (1 Kings 6: 21-22), casting major works of brass to be kept therein and appointing it with many others of solid gold. Indeed, he had men to work “in gold, and in silver, and in brass, and in iron” (2 Chronicles 2:7), “in stone, and in timber, in purple, in blue, and in fine linen, and in crimson” (2 Chronicles 2:14), even creating a navy of ships to conduct the commerce he required (1 Kings 9:26-28).

Little is said in this account with respect to conservation or the wise and careful use of resources; but perhaps there was little need to say anything on these matters in those days. On subjects more directly linked to human survival, however, the Lord was clearly more concerned with aspects of sustainability and wise use; and nowhere is this fact more evident than in His teachings on farming and animal husbandry.

From the very beginning, man was instructed to grow crops and raise livestock; and of Adam’s sons, Cain became “a tiller of the ground” and Abel “a keeper of sheep” (Genesis 4:2). Under the inspiration of the Lord, subsequent generations dug wells for their flocks (Genesis 26:17-22); and when their herds grew so great that they began to degrade the land, they typically separated from each other, as did Abram and Lot when “the land was not able to bear them” (Genesis 13:6). So concerned was the Lord with the long-term vitality and sustainability of the land, in fact, that He commanded the Israelites that every seventh year “shall be a sabbath of rest unto the land,” wherein they should neither sow nor reap (Leviticus 25:4-5).

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The Preeminent Environmental Dilemma of Our Day

When life forms are few and far between, as they were in the beginning and when they scattered in all directions upon exiting the ark of Noah, there is little occasion for conflict to arise among them. But as animal and man responded to the instructions of God to breed abundantly and replenish the earth, opportunities for interaction increased, creating problems. In our day, this conflict is most vexing; for humanity has become so numerous, so widespread, and so voracious in its appetite for the resources of the world, that many of God's plant and animal creations stand on the verge of being driven from the scene, which does not appear to be consistent with the Divine Will as revealed in the *Bible*.

So what is man to do? Why, the right thing, of course, which is basically to strive to do all in his power to maintain the planet's biodiversity, while not interfering with the simultaneous unfolding of God's designs for humanity. But how is it to be done? That is the question over which all honest men and women agonize. Nearly everyone agrees on the goal; it is the getting there that divides us.

As a prime example of the difficulties we face in this regard, consider the rising carbon dioxide content of earth's atmosphere, which is nearly universally acknowledged to be a direct consequence of humanity's ever-increasing usage of fossil fuels. Some people believe that this rise in CO₂ will intensify the atmosphere's natural greenhouse effect, leading to a warming of the globe that will be so rapid that many plants (and some of the animals that are dependent upon them) will not be able to migrate fast enough to remain within the climatic regimes to which they are currently accustomed, with the end result that they will ultimately face extinction. They also anticipate changes in weather patterns that may be disruptive of agriculture and that may seriously impact our ability to feed an ever-growing world population. Others, however, foresee little or no increase in global temperatures as a result of the upward trend in the air's CO₂ content. Rather, they see a great "greening of the earth" produced by the aerial fertilization effect of atmospheric CO₂ enrichment, which they believe will support the production of *increased* amounts of food and forage, enabling the planet to sustain even greater populations of people and animals than it does today.

Which view is correct? Or are they both wrong together? Or both partly right? If the first assessment is sound, more atmospheric CO₂ is a biospheric poison; if the second is valid, it is the elixir of life. One conclusion demands that we put the brakes on energy-intensive development; the other says full speed ahead. The policy implications of the two world views are diametrically opposed to each other; and the fate of the earth hangs in the balance. Thus is this problem the preeminent environmental dilemma of our day. And as it involves the potential extinction of species, and could interfere with God's never-revoked command for humanity to be fruitful and *multiply* (not just maintain the status quo), we may well have a Biblically-mandated duty to attempt to resolve it. But what a task for mere mortals and their finite minds! Are we really qualified to tinker with the designs and handiwork of Deity? Even if our intentions are good, the results could be otherwise—even self-destructive—as they were for Uzzah of old, who put forth his hand to steady the ark of God and was smitten of the Lord that he died (2 Samuel 6:6-7).

Where is Wisdom?

When Solomon was established on the throne of his father, David, the Lord appeared to him in a dream by night, saying “Ask what I shall give thee” (1 Kings 3:5). Solomon’s request was for “an understanding heart” that he might “discern between good and bad” (1 Kings 3:9). This desire pleased the Lord. “And God gave Solomon wisdom and understanding exceeding much,” so that “he was wiser than all men” (1 Kings 4:29-30).

Clearly, wisdom *is* the gift of God (1 Corinthians 12:8); and it is an attribute of which we are in desperate need. Fortunately for us, it is also there for the asking: “If any of you lack wisdom,” the *Bible* says, “let him ask of God, that giveth to all men liberally, and upbraideth not; and it shall be given him” (James 1:5). “But,” as it continues, “let him ask in faith, nothing wavering. For he that wavereth is like a wave of the sea driven with the wind and tossed. For let not that man think that he shall receive any thing of the Lord” (James 1:6-7).

Faith, therefore, is the key to obtaining wisdom. Yet even here the scriptures remind us that “faith, if it hath not works, is dead” (James 2:17). So what are the *works* that lead to the *faith* that produces the *wisdom* to solve a particular problem?

Consider, again, the great King Solomon. There came two women to him, each claiming to be the mother of a child over whom they contended. His first act when confronted with the dilemma was to weigh the available evidence, which in this case comprised the conflicting stories of the two parties. Then, when that evidence was insufficient to resolve the conflict, he devised an ingenious gambit to acquire additional insight. He threatened to divide the infant in two and give each woman half, whereupon the child’s true mother attempted to save the baby’s life by offering it to the other woman; and in so doing she revealed herself to Solomon to be the real parent. “And all Israel heard of the judgement which the King had judged; and they feared the king: for they saw that the wisdom of God was in him” (1 Kings 3:16-28).

It is evident from this account that the wisest of all men did not magically produce answers to problems by plucking them out of thin air. Rather, he assembled all of the pertinent evidence; and, if that evidence was found to be insufficient to resolve the issue, he conducted experiments that produced new evidence. And by such means Solomon gained knowledge of all things: “of trees ... of beasts, and of fowl, and of creeping things, and of fishes. And there came of all people to hear the wisdom of Solomon, from all the kings of the earth” (1 Kings 4:33-34).

Clearly, wisdom does not just happen. It is the result of long and arduous apprenticeship, of meticulous measurement and observation, of blood, sweat and tears. Thus was Joseph thirteen years in servitude in the land of Egypt, learning invaluable lessons in the trenches of life, before God, by Pharaoh, raised him up and set him over all the land. And why was Joseph thus honored and empowered? Because he saw order where others saw chaos. When all the magicians and the wise men of Egypt could not interpret the dreams of a troubled sovereign, Joseph perceived their message. And as with Solomon, it was said of Joseph, there was “none so discreet and wise” (Genesis 41:39).

Returning to our own day, the monumental complexity of the issue of potential CO₂-induced global change demands that same wisdom. Indeed, as in the days of old the leaders of the nations rush to and fro, even now, searching for it among their magicians and wise men; but they

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find it not. Truly, it is as Isaiah prophesied when he declared that “the wisdom of their wise men shall perish, and the understanding of their prudent men shall be hid” (Isaiah 29:14). But why?

Could it be, as the prophet says in the next verse (29:15), that some of the primary participants in this endeavor have ulterior motives and they “seek deep to hide their counsel from the Lord, and their works are in the dark, and they say, Who seeth us? and who knoweth us?” Is it because of their “turning of things upside down,” of which he accuses them in the following verse (29:16), and where he reveals them to be hypocrites at best: “shall the work say of him that made it, He made me not? or shall the thing framed say of him that framed it, He had no understanding?”

Clearly, wisdom will only be found by looking up and getting down: by looking up to God, the Framers of the earth and Creator of all that is found therein, and by getting down to the absolutely unavoidable tasks of observing, measuring, analyzing, measuring some more, reanalyzing, and finally (we can only pray) seeing the light. For as Isaiah rhetorically asks with respect to the days in which we now live (29:17), “Is it not yet a very little while, and Lebanon shall be turned into a fruitful field, and the fruitful field shall be esteemed as a forest?” Truly, the problem will be solved, for the Lord has declared it; and the end result will be a considerably more productive world than that in which we currently reside. For as Isaiah also declares of the *Lord's* (not man's) actions on behalf of the planet, “he will comfort all her waste places; and he will make her wilderness like Eden, and her desert like the garden of the Lord” (Isaiah 51:3). What remains to be determined, then, is our role in the process. Will we be part of the solution, or is our *best wisdom* but a “turning of things upside down?” How we answer this question is of vital importance for each one of us; for surely, the Lord will one day judge us and hold us accountable for our actions with respect to this issue.

What About Righteousness?

As technology has increased in the earth, the Industrial Revolution has indeed taken its toll on the planet, but not in the ways decried by those who would turn back the clock to a simpler time. Rather, as humanity has been transformed from a largely agrarian society to one much further removed from the basic elements of nature, so also has the knowledge of our direct dependence on God for supplying our needs been greatly diminished. Whereas we used to importune Him regularly for our daily bread and then thank Him for his graciousness in supplying it unto us, we now obtain it from the local convenience store and complain if we have to stand too long in line to pay for it. To a large extent we have forgotten that our most basic needs are supplied by a kind and loving Heavenly Father, who has told us that His blessings are dependent, first and foremost, upon our keeping His commandments (Leviticus 26:3-5,9).

“If ye walk in my statutes, and keep my commandments, and do them; Then I will give you rain in due season, and the land shall yield her increase, and the trees of the field shall yield their fruit. And your threshing shall reach unto the vintage, and the vintage shall reach unto the sowing time: and ye shall eat your bread to the full ... For I will have respect unto you, and make you fruitful, and multiply you.”

“Wherefore, it shall come to pass,” as it is said in Deuteronomy 7:12-13, “if ye hearken to do these judgements, and keep them, and do them, that the Lord thy God ... will love thee, and bless thee, and multiply thee: he will also bless the fruit of thy womb, and the fruit of thy land, thy corn, and thy wine, and thine oil, the increase of thy kine, and the flocks of thy sheep.”

To the learned of the world, such declarations of cause and effect—of the productivity of the land being dependent upon righteous living—might seem like foolishness. But “the foolishness of God is wiser than men; and the weakness of God is stronger than men” (1 Corinthians 1:25), just as it is written that “the wisdom of this world is foolishness with God” (1 Corinthians 3:19). Indeed, as is recorded in Isaiah 55:8-9, “my thoughts are not your thoughts, neither are your ways my ways, saith the Lord. For as the heavens are higher than the earth, so are my ways higher than your ways, and my thoughts than your thoughts.”

When will the people of the earth see the light and realize that their own wisdom is not sufficient to resolve all their problems? If the past is prologue to the future, probably not anytime soon; for such an acknowledgment will only come when we live as God wants us to live. And as we see each day on the nightly news, we have a long, long way to go before achieving such a state.

The Face of the Future

In concluding this treatise, let us consider the words of the Lord as given to the prophet Ezekiel (chapter 36); for they describe the near-future earth in terms that sound much like the predictions of one of the parties to the great CO₂ debate, which could well be a means of steering us in the right direction.

To a large extent we have forgotten that our most basic needs are supplied by a kind and loving Heavenly Father, who has told us that His blessings are dependent, first and foremost, upon our keeping His commandments.

“Thus saith the Lord God to the mountains, and to the hills, to the rivers, and to the valleys, to the desolate wastes ... ye shall shoot forth your branches, and yield your fruit to my people ... I will multiply upon you man and beast; and they shall increase and bring fruit ... And I will multiply the fruit of the tree, and the increase of the field, that ye shall receive no more reproach of famine ... And the desolate land shall be tilled ... And they shall say, This that was desolate is become like the garden of Eden ... I the Lord have spoken it, and I will do it ... and they shall know that I am the Lord.”

Nowhere in this declaration, nor in any other place in the cannon of the Holy Scriptures, is there any indication that anyone other than God is going to bring about the bountiful conditions of biological productivity that will sustain the future human and animal populations of the planet. No man or woman or nation or group of nations will ever consciously devise and implement a plan that will usher in such an age of plenty, without acknowledging the hand of the Lord in the matter. Neither is there any indication that the number of people on the planet will ever grow too great, in and of itself, to threaten any of God’s other creations. Indeed, the Lord always speaks of the multiplying and increasing of mankind’s numbers as something to be desired.

The only thing God clearly denounces—and to which He attributes our problems—is sin. Hence, if we will turn to Him and listen to His wisdom, He will see to all our needs, as well as those of all of His other creations. In fact, He may even allow us to be participants in His decreed transformation of the planet; but it will be on *His* terms and according to *His* timetable. Indeed, even now, we may already be unknowing participants in the great plan, as our burning of fossil fuels releases long-sequestered carbon to the atmosphere, awakening earth’s plant life from the lethargy of the low CO₂ concentrations under which it has basically slumbered throughout the entire history of man. Let us deeply consider these matters—even prayerfully—before we put forth our arm to steady the ark of God. He is clearly capable of doing His own work.



About the Center

The *Center for the Study of Carbon Dioxide and Global Change* was founded as a non-profit organization in 1998 to provide regular reviews and commentary on new developments in the world-wide scientific quest to determine the climatic and biological consequences of the ongoing rise in the air's CO₂ content. It achieves this objective primarily through the weekly online publication of '*CO₂ Science*,' which is freely available on the Internet at www.co2science.org, and contains reviews of recently published peer-reviewed scientific journal articles, original research, and other educational materials germane to the debate over carbon dioxide and global change.

The Center's main focus is to separate reality from rhetoric in the emotionally-charged debate that swirls around the subject of carbon dioxide and global change by utilizing sound science. It has a stated commitment to empirical evidence and its position on global warming may be summarized as follows. There is little doubt the carbon dioxide concentration of the atmosphere has risen significantly over the past 100 to 150 years from humanity's use of fossil fuels and that the Earth has warmed slightly over the same period; but there is no compelling reason to believe that the rise in temperature was caused primarily by the rise in carbon dioxide. Moreover, real world data provide no compelling evidence to suggest that the ongoing rise in the carbon dioxide concentration of the atmosphere will lead to significant global warming or changes in Earth's climate. In contrast, thousands of laboratory and field studies have confirmed multiple biologic benefits of elevated CO₂ are occurring now and will continue to occur in the future as the CO₂ content of the air continues to rise.

Support for the Center's thesis is found in numerous articles and other material posted on its website, where in the 18-year period since its creation, the Center has published over 6,000 timely and objective reviews of scientific research reports on both the biological and climatological effects of atmospheric CO₂ enrichment. Accompanying each review is the full peer-reviewed scientific journal reference from which the review was derived, so that patrons may independently obtain the original journal articles and verify the information for themselves.