CREATION CARE GREEN TIPS  - August 2022

**Our Future as Atmospheric CO2 Rises to the Highest Level in Human History**

1.  Industrial carbon dioxide emissions come from the burning of coal, oil and gas, with levels of **280 parts per million** at the beginning of the Industrial Revolution in the late 19th century now reaching an average of **421 parts per million** in May, 2022, according to the National Oceanic and Atmospheric Administration (NOAA).  These levels, which continue to rise, are now about the same as 4.1-4.5 million years ago, when temperatures were 7 degrees (3.9 degrees Celsius) hotter and sea levels were 16 to 82 feet higher than now (for example, South Florida was completely under water).   During that time, the natural increase in CO2 levels was far more gradual, which is why it was much warmer and seas were higher than under the same conditions now.  But since CO2 stays in the atmosphere up to a thousand years, the increasing levels will continue to create hotter temperatures and higher sea level rises.  Scientists involved in the NOAA study warn that **without stringent cuts in CO2 emissions**, "we will see ever more damaging levels of climate change, more heat waves, more flooding, more droughts, more large storms and higher sea levels."

2.  The following four points regarding **climate change** sum up the findings of the most accurate and widely agreed upon scientific information:  **1) climate change isn't only about computer models,** but also rests on what scientists have understood for over a century about the basic physics of greenhouse gasses causing warming.  Temperature measurements taken since the mid-1800s reveal the changes that began during the Industrial Revolution, and are corroborated by studying geological records and by satellites tracking surface temperatures: **2) Numerous studies, endorsed by NASA**, have found that more than 90% of scientists who study Earth's climate agree that the planet is warming, largely due to human actions.  The views of the few scientists who remain opposed have not held up under the weight of evidence; **3) Although the planet warming 2 degrees F since the 1800s** may not seem like much, the confusion is due to **the difference between weather and climate.  Weather** is the day-to-day meteorological conditions outside, while **climate** is the long-term average of those conditions.  A 2 degree F difference from one day to the next is not a big change, whereas it represents a **huge change in climate -** enough to melt ice and raise sea levels, shift rainfall patterns and alter ecosystems, killing millions of trees; **4) estimated costs of keeping warming from increasing** would require a total investment of $4 trillion to $60 trillion (the world economy was about $88 trillion in 2019).  Moody's Analytics estimates that **doing nothing would also be costly,** costing $69 trillion by 2100, with increasing tolls as temperatures rise.

3.  While Minnesota missed the target set in the state's 2007 Next Generation Energy Act to cut greenhouse gas emissions (15% by 2015) as well as falling behind on meeting its next target (40% by 2025), the Governor's year-old appointed **Advisory Council on Climate Change** is tasked with redoubling efforts to hit its ultimate target of cutting emissions by 80% by 2050.  The 15-member citizen council will advise the **Climate Change Subcabinet** headed by the Minnesota Pollution Control Agency (MPCA) Commissioner, and is comprised of farmers, academics, utility executives, tribal officials and others.  Emissions from **power plants and energy production** in Minnesota have fallen, but emissions from **agriculture and transportation**, especially passenger vehicles, have not.  The MPCA's Clean Cars measure to require automakers to deliver more fuel-efficient vehicles for sale in Minnesota includes **battery electric vehicles, plug-in hybrid electric vehicles and hydrogen-fueled vehicles.** With nearly a dozen other states also adopting such standards, ADD YOUR VOICE to letting elected officials know that you support these efforts.

4.  A new study published in *Nature* identifies a road map for addressing the twin crises of **climate change and biodiversity loss** (as many as 1 million species are at risk of extinction) by returning a strategic 30% of the world's farmlands to nature.  Identifying the most strategic parts of the planet to protect would soak up **almost half the carbon dioxide that has built up since the Industrial Revolution** and prevent the predicted extinction on land of more than 70% of threatened plants and animals.  The authors estimate that **55% of farmland on the global level** could be returned to nature while maintaining current levels of food production by using existing agricultural land more effectively and sustainably.  The costs would be high, but the authors point out that the **hundreds of billions of dollars per year subsidizing fossil fuels and unsustainable farming practices** could be available instead to pay farmers to restore their land to nature and for other investments.  Other steps include: **stopping the use of fossil fuels; reducing food, energy and plastic waste; and making sustainable choices when purchasing needed items.**