

Climate Change and Pope Francis' Message

“Climate change is a global problem...humanity is called to combat this warming”

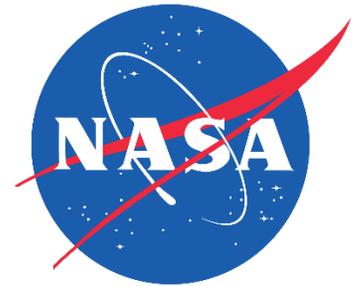
Pope Francis, *Laudato Si'* May 24, 2015



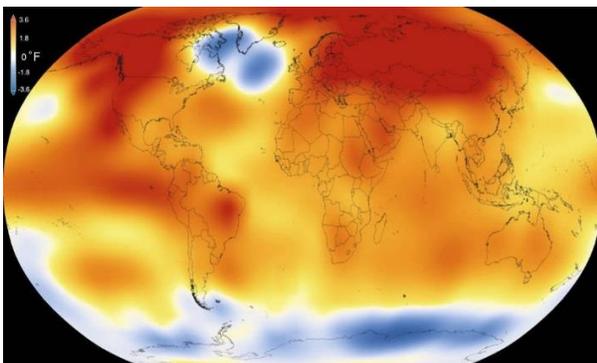
In May of 2015, Pope Francis released an encyclical entitled, *Laudato Si', On Care of Our Common Home*. Pope Francis emphasized the moral responsibility of Catholics to address climate change which will affect all of us, particularly, the world's poorest and most vulnerable populations.

Father Scott charged several St. Patrick's parishioners with providing relevant and balanced scientific information on global warming. These parishioners have strong scientific backgrounds. They compiled the data below. From the many sources available, the NASA website at climate.nasa.gov/evidence was chosen for its brevity and clarity. The following pages are extracted from that site.

NASA is the branch of the U.S. government best known for the placement of satellites for communication and military uses and for the programs that have led to the successful moon landing. NASA has also been involved in climate research because of its profound influence on these endeavors.



Global Temperature Rise



All three major global surface temperature reconstructions show that the earth has warmed since 1880. *Most of the warming has occurred in the past 35 years with 15 of the 16 warmest years on record occurring since 2001.* The year 2015 was the first time the global average temperatures were 1 degree Celsius or more above the 1880-1899 average. Even though the 2000s witnessed a solar output decline resulting in an unusually deep solar minimum in 2007-2009, surface temperatures continue to increase.

Sea Level Rise

The global sea level rose about 17 cm (6.7 inches) in the last century. The rate in the last decade, however, is nearly double that of the last century. Bangladesh will be among the most affected countries in south Asia by an expected 2 degree C rise in the world's average temperatures in the next decades, Rising sea levels will result in more extreme heat, more intense cyclones threatening food production, livelihoods, and infrastructure. 40% of productive land is projected to be lost in the southern region of Bangladesh for a 65cm sea level rise by the 2080s, affecting food security. About 20 million people in the coastal areas of Bangladesh are already affected by salinity in drinking water. (World Bank, 06/2013)



Ocean Acidification

Since the beginning of the Industrial Revolution, the acidity of surface ocean waters has increased by about 30 percent. This increase is the result of humans emitting more carbon dioxide into the atmosphere and hence more being absorbed into the oceans. The amount of carbon dioxide absorbed by the upper layer of the oceans is increasing by about 2 billion tons per year.

"We've been able to tease out the percentage of human-caused carbon dioxide from natural carbon dioxide along a large portion of the West Coast and link it directly to pteropod shell dissolution. Our research shows that humans are increasing the *acidification* of U.S. west coastal waters, making it more difficult for marine species to build strong shells." (Feely,R., et.al Estuarine, Coastal and Shelf Science 2016; 183, Part A: 260-270) These small free-swimming marine snails provide food for commercially important fish such as salmon, mackerel, and herring.

