

Saints Andrew and Matthew Episcopal Church Sermon Oct. 19, 2014
For the 2nd Week of Season of Creation

MOTHER EARTH

By Chad A. Tolman

Good morning. I would like to begin by thanking Father David for his kind invitation to share my message about Mother Earth as part of the Season of Creation series of services. I call on all people of faith to take action on what may be the greatest ethical challenge of our time.

Today I hope to encourage you to look at our society's energy system in a new way, to see that it is both unsustainable and unethical, and to recognize that we all have a responsibility to do something about it. As people of faith, we must take actions to reduce our energy use, to begin to live sustainably, to minimize the damage we are doing to the climate system, to promote climate justice, and to do what we can to preserve God's magnificent creation.

The UN Millennium Development Goals were established in the year 2000 to reduce the number of people who suffer from extreme poverty by 2015. The eight goals were developed by leaders from 191 countries, and were formally endorsed by the Episcopalian Church at its General Convention in 2003. They were made a mission priority three years later. Climate change is going to make many of the goals very difficult to achieve – particularly these four:

- 1. Eradicate extreme poverty and hunger**
- 4. Reduce child mortality**
- 6. Combat HIV/AIDS, malaria and other diseases**
- 7. Ensure environmental sustainability**

Before I discuss why they will be difficult, I'd like you to understand some of the basic science behind climate change – sometimes called global warming. The warming I'm talking about is the change in global average surface temperature on land and sea that has occurred since the beginning of the Industrial Revolution. That's when we first started burning lots of coal, and later oil and natural gas, to drive our steam engines, heat our homes, power our vehicles, and generate electricity at our power plants. These three fuels are called fossil fuels because they're from plants and animals that lived tens to hundreds of millions of years ago, when plants and sunlight converted carbon dioxide and water into organic chemicals. Burning those fossil fuels has released that stored energy to provide the conveniences and labor-saving devices of modern industrial societies, but it has also released the stored carbon - back into the atmosphere as carbon dioxide. Measurements show that its concentration is now more than 40% higher than it was in 1750, and that humans are emitting more into the atmosphere every year. So far we have increased the global average temperature by about 1.5° F, and can already see more flooding, droughts, wildfires and stronger storms, If we continue business-as-usual, we could increase the concentration by 2100 to two or three times what it is now, and increase the temperature by 10° or 11° F – temperatures the earth has not seen for 56 million years, at a time when there were no polar ice caps, and sea levels were 250 feet higher than they are now.

So why does adding carbon dioxide to the atmosphere make the earth's surface warmer? The earth's temperature is determined mostly by three factors: 1) the intensity of the radiation coming from the sun, 2) the fraction of that radiation that is absorbed versus being reflected back into space, and 3) the concentrations of greenhouse gases, like carbon dioxide. While the sun

does gradually emit more radiation as it ages, and a larger fraction of the sun's radiation is absorbed as the areas covered by ice and snow decrease, the major cause of warming is the increase in concentrations of greenhouse gases. These gases are colorless and let visible light pass straight through the atmosphere, but absorb longer wavelength infrared radiation coming up from the earth and impede its escape into space. The extra energy has to go somewhere, so it warms the earth's surface, melts ice and snow, drives stronger storms, and evaporates more water. More evaporation causes droughts in some areas, like California, and floods because of heavy rainfall in others, like Southbridge here in Wilmington.

Carbon dioxide does something else besides adding energy to the earth system; part of it dissolves in the oceans, making them more acidic. Carbon dioxide dissolved in the coke in a freshly opened can is what gives it a sparkly taste. Too much dissolved in the oceans, however, can interfere with the formation of the calcium carbonate needed for the shells of shellfish, the structures of coral reefs, and the skeletons of the phytoplankton at the base of the oceans' food chain. This happened 56 million years ago when the concentration of carbon dioxide in the oceans got so high that there was an oceanic extinction event that can be seen in the fossil record. Geologists call it the Paleocene-Eocene Thermal Maximum. At that time there was enough carbon dioxide in the atmosphere to raise earth's surface temperature by 10° or 11° F.

So now let's go back to the Millennium Development Goals and see how they might be impacted by climate change. In terms of eradicating extreme poverty and hunger, the 1st Goal, floods, droughts, the spread of insect pests

and ocean acidification will make it more difficult to end poverty and produce the food necessary to feed earth's growing population. Hunger, poverty, armed conflict and growing refugee populations will make it more difficult to reduce child mortality. Increasing temperatures lead to the spread of mosquitoes, ticks and other disease-carrying insects to higher elevations and more northern latitudes – spreading malaria, dengue fever and Lyme disease. Conflicts over food, water and energy supplies are increasing as the climate changes; Al Gore and the Intergovernmental Panel on Climate Change each received a Nobel Peace Prize for their work on climate change. Environmental sustainability becomes more difficult to achieve as fossil fuels are extracted and moved across environmentally sensitive areas. Examples are mining Alberta tar sands and moving the crude oil by the proposed Keystone XL pipeline to the Gulf Coast for refining, fracking for oil and gas in the Bakken formation in North Dakota and bringing it to Delaware City by rail, and drilling for oil and gas in the Arctic in areas once covered by sea ice, and shipping it south.

The UN World Commission on Environment and Development defined **'sustainable development'** as **“meeting the needs of the present without compromising the ability of future generations to meet their own needs.”**

The burning of fossil fuels—coal, oil and natural gas—provides most of the energy used by modern industrial societies, but it is not sustainable--for two reasons. First, fossil fuels are a finite resource, formed over hundreds of millions of years. Once they are gone, they are gone forever. They are being burned at an ever-increasing rate as populations grow and as people around the world want the same things we have. And second, by burning these carbon-based fuels we are increasing the concentration of carbon dioxide in the

atmosphere and changing earth's climate - in ways that we don't totally understand, and at rates that we don't seem to be able to control.

And here is where climate justice comes in. Most of the emissions that damage our health and our climate come from the wealthy, while most of the suffering is borne by those who are least responsible: the poor, the elderly, the very young, and those not yet born in future generations.

So what can we do? You've heard the bad news. What is there to provide hope?

Before I give you some of my thoughts, I ask each of you to look deep within your own heart, and ask yourself: **What does God ask of me? Does He expect me to help protect and preserve his Creation for our children and grandchildren, and for generations still to come? And what should I do for the least of these, my brothers and sisters, who are already suffering because of what I have unwittingly done?**

Consider the following:

- Become informed. A good place to start is a list of recommended reading I can provide. You can also subscribe to ***Climate Change News***, an electronic newsletter that I write each month to keep people informed on energy and climate change science, public policy, public opinion and ethics.
- Know how much carbon your family emits each year, and set a goal of reducing your carbon emissions by 20%. You can find a lot of good ideas in a book titled, **Cooler Smarter – Practical Steps for Low-Carbon Living** from the Union of Concerned Scientists (UCS).

- Give time and support to an organization working on climate change. One of these is the New Castle County Congregations (NC3) of Delaware Interfaith Power and Light. We would like to have a representative and an alternate from SsAMS come to our meetings held every other month. You might want to form a group in this church of those interested in saving money, reducing emissions, and promoting climate justice. Other good organizations are the LWV, the Sierra Club, the Delaware Nature Society and the UCS.
- Write and talk to your legislators and government officials – at the city, county, state, and federal levels. Let them know you care about energy and the environment, and that you expect them to take thoughtful action.

I have six grandchildren, ranging in age from 3 to 21. I really worry about what kind of a world we will leave them. The thing that gives me hope, is that I know we don't have to continue down this path of the unsustainable, and ultimately immoral, burning of fossil fuels and the climate change, suffering and destruction of the Mother Earth that it produces. I know that by working together, we can make a difference. We can help both preserve God's Creation and build a world of environmental justice, where the more fortunate care about and protect the poor, the weak, and generations yet unborn.

I would like to close with a reading from [Matthew 25:35-40](#) :

35 For I was hungry and you gave me something to eat, I was thirsty and you gave me something to drink, I was a stranger and you invited me in,

36 I needed clothes and you clothed me, I was sick and you looked after me, I was in prison and you came to visit me.'

37 "Then the righteous will answer him, 'Lord, when did we see you hungry and feed you, or thirsty and give you something to drink?

38 When did we see you a stranger and invite you in, or needing clothes and clothe you?

39 When did we see you sick or in prison and go to visit you?'

40 "The King will reply, 'Truly I tell you, whatever you did for one of the least of these brothers and sisters of mine, you did for me.'

Amen.