

Earth Day: Earth, Water, Fire, and Air
April 24, 2022
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Over twenty years ago I well remember then Senator Al Gore talking about rising CO2 levels and its negative effects on our planet. In the huge conference hall where he gave his presentation, he had a flashlight that he shone on a wall, to show graphically, the increasing levels of CO2 in our environment.

That light moved up and up the wall, much to the surprise of many of us. Senator Gore spoke of the inconvenient truth of climate change. As we now know well, those levels of CO2 and other fossil fuel gases have continued to climb, to the point that today we have increasingly human caused catastrophic climate events - events that move the term "climate change" to the term "climate crisis" and now, today to the phrase "to full out red alert!" Increased flooding, extreme heat waves, powerful storms are happening and predicted to increase across the globe.

In spite of years of alarms and warnings, many of us as humans have been unable to pay full attention to the ever-increasing emissions of greenhouse gases well documented today by over 2500 scientists around the world.

Scientists tell us that the time for turning around this crisis is short- we only have about a decade or so, to place our Earth as the top priority for our attention – full mindfulness and actions aimed at healing our planet, aimed at restoring the balance of the elements that make up our earth – and importantly ourselves as well – the elements of earth, water, fire and air. These four elements are essential for life.

In terms of the current climate crisis let's use for this sermon, the recent scientific discoveries about trees around the globe,¹ -research I discovered in the May issue of the National Geographic magazine. Let's look at what is happening to trees as just one example of many, of how these four elements of earth, water, fire and air, are profoundly affected by the changes caused by extreme weather events.

¹ Much of the information about trees in this sermon is found in National Geographic Magazine, May 2022.

*It's a tough time to be a tree.*²

Tragically, some of the biggest and oldest trees are currently at risk. For example, in Sequoia National Forest, in California wildfires in the past two years -2020, 2021 – have killed up to a fifth of the largest Sequoias – trees that before now, - had weathered a millennium of threats.

- trees that had survived since the time of Julius Caesar³. Because of the frequency of the wildfires, trees that historically have been able to survive wildfires – by rejuvenating new sprouts or seedlings, do not have a chance to grow new trees, as wildfires are coming too often, destroying any new growth.

Another tree at risk is the Bristlecone pine – over 5,000 years old, which sheds its pinecones when threatened by fire. In the current climate crisis with the intensity and frequency of wildfires so great, the dropped pinecones have been destroyed by another fire that quickly follows, and thus, no new growth occurs.

And in the Castle wildfire in California in 2021, flames came so near to the biggest tree on earth – a tree named General Sherman-again a Sequoia, -The flames came so close that firefighters wrapped the bottom portion of General Sherman in flame resistant material. The firefighters, bless them, also wrapped other Sequoias as well. - General Sherman stands at 275 feet tall and is over 36 feet in diameter at its base. Loss of General Sherman and many other long-living trees on earth are irreplaceable.

What has caused these wildfires to be more powerful than ever before is the combination of intense heat and high winds that blows the embers of the fires even up into the crowns of these giants, thus, setting their crowns on fire.

In terms of trees globally, our earth has lost about one third of its forests over the past 10,000 years, - half of that since 1900. Since 1990 the world has cut down more forests

² Ibid.

³ Ibid.

than there are forests in our nation⁴.

The biggest threats to trees are logging and land clearing,
Then, next comes climate change.
This ratio of threats is changing more and more
as climate change rises higher in the ratio as time goes on.
Climate change is killing trees through fires, more powerful storms,
insect infestations, and most prevalently, through heat and drought.

Many of us don't realize just how fragile the trees are around us.⁵

Trees around the world are vulnerable
to the added heat that climate change brings.
Within the past decade scientists have figured
out that many trees are at the limit of their hydraulic systems.⁶
Additional heat may push such trees beyond their capacity for life.
During a drought, they may close the pores in their leaves or even shed leaves.
And this again, limits the CO₂ they can take in.
The trees can become both hungry and thirsty during severe droughts.
If the soil gets too dry, the trees can't take water up to their leaves.
This is no longer theoretical, but a reality growing in front of us.⁷

For example, in 2011 in Texas
one out of every sixteen trees died from drought.
And after the El Nino of 2015 over 39 million mangroves,
already stressed by heat and drought from the climate crisis,
died of thirst as the El Nino caused a temporary 16-inch drop in water
along the hundreds of miles of the Australian Gulf of Carpentaria coast.⁸
Quaking aspens, beloved trees of North America, are dying off in droves,
most likely because heat and drought make these trees more susceptible
to disease and insects, in particular - tent caterpillars.

Across the globe, heat and drought, rising sea levels,
powerful winds are killing our forests.
Forests unable to regenerate are turning
into different environments without trees, such as meadow lands.
It's clear that our planet's ecology is changing.

However, some trees are migrating to escape the heat and drought.
Alders, willows and dwarf birches

⁴ National Geographic Magazine, *Forests are reeling from Climate Change*, May 2022.

⁵ Ibid.

⁶ Ibid

⁷ Quote from Craig Allen in Ibid.

⁸ National Geographic Magazine. *Forests are Reeling from Climate Change*. May 2022

are moving up slopes or migrating towards the north pole,
and growing fast, as they soak up the excess CO2 in the earth's atmosphere.
These trees are helping to keep our planet green,
providing needed protection for animals.
These migrating trees are able, right now,
to maintain a healthy balance of the four elements,
earth, water, fire and air,
unlike those trees which do not migrate.

We grieve over the loss of beloved trees.
But what are also lost are the animals and their homes
and yes, human homes and lives,
through the devastating effects of today's intense wildfires.
The air is polluted and fouls even some of our cities' air,
such as in San Francisco and Seattle.
The trees destroyed mean less trees
that can extract CO2 from the atmosphere.
Where we are today is expressed by ecologist Jennifer Balzer who says:
*"each region (in our world) is its own case,
but the threat to forests is general and global..
There's just red flag after red flag after red flag."*⁹

Scientists are telling us that we can limit the damage,
if we change directions. But we must not delay.
Importantly we need to stop the destruction of native forests,
especially tropical, boreal, and temperate old growth forests.¹⁰
These are trees that are irreplaceable.
Right now, most of these trees are healthy and thriving.

We best protect the forests we do have now.
Hopefully we can better learn how to manage wildfire risks.
And we can restore damaged forests.
Scientists are exploring ways as well to help us save our trees.
One question they are experimenting with
is how to help trees keep up with human caused climate change.
How far north do trees need to be replanted to survive climate stressors?
One researcher states that the problem is simple:
*"The climate is moving, and trees cannot walk."*¹¹
On average trees world-wide can expand their range up to 3,000 feet/year.
To keep pace with climate change today
scientists tell us they need to move 6 -10 times faster.

⁹ Ibid.

¹⁰ Ibid,

¹¹ Cuauhtémoc Sáenz-Romero, a researcher at the Universidad Michoacana de San Nicolás de Hidalgo, in Mexico. 4 Solutions for Trees and Forests. National Geographic Magazine, May 2022.

Replanting of trees at this greater distance is hoped to keep pace with climate change.

Other research is focusing on creating more resilient trees through genetic engineering, which is somewhat controversial. For example, research on preventing blight on the American Chestnut tree has found a pathway for this American Chestnut tree to be given new life, - Amazing! But such research now faces the challenges of getting the approval from the US Dept. of Agriculture for a genetically altered plant. So far, no go.

One of the most important solutions for the climate crisis is, of course, breaking our dependence on fossil fuels as quickly as possible.

I am proud to say that our small congregation is doing what we can to lessen the impact of the climate crisis. First and importantly, we became an official UUA designated Green Sanctuary Program last year. Through the persistent and informative efforts of our very dedicated Green Sanctuary chairs, Roger and Inez Andrews, we have organized to lessen our carbon foot prints. We have weatherized our church building, and replaced all our lights with LED lights. We are studying whether or not to proceed with solar panels.

We have a sub-group focusing on what we each can do in our individual lives to mitigate green greenhouse gases. Another sub-group is meeting to discuss actions we can take to deal with adaptations to the effects of climate change. And another one has formed to monitor climate related legislation. Our congregation, along with the Lions Club, has become well known throughout the Laconia region for our regular collections of soft plastics for recycling.

It is my hope that we continue to be mindful of political candidates who understand how dangerous the time we are living in is, in terms of our climate. And that, importantly, we vote for such candidates.

It is also my hope that we challenge apathy towards climate issues by responding that while yes, on an individual level, our effects can feel small, but together – coming together with many others,

we can truly take sustained actions that lessen greenhouse effects.
Only then we will turn this crisis around.

I have been thinking a lot about what is happening to our trees,
and to the four elements that compose them.
These four elements, in my mind,
are no different than what are found
within me or you or any living being on earth.

How often have I sat with a dying person
through my many years of ministry,
and through my own personal living,
and observed closely what happens when we humans die.
The earth element within us is weakened.
The water element dries up.
We eventually lose the warmth of the fire element within us.
And in the end, at the last moment, when we take our final breath,
the air element leaves our bodies as we expire.

I think we humans best pay attention
to what is happening to the trees around us.
They are forewarning us.
Their earth element is being destroyed by fire, insects, and wind.
Their water element is drying up because of heat and drought,
and they die of thirst.
The fire element from the outside is consuming them,
And the wind element is carrying the fire element into their branches.

The dying process of the trees is not that different than how we die.
May we wake up
to understand just how interconnected we all are
to the trees and to all of earth's living creatures and life.
And may we do, whatever we can to stop –
To pay attention – to be mindful of what is truly happening –
And then to act in ways that can heal our earth,
however we can
– without waiting – for time is short,
and the trees and all of life are calling us,
to not sleepwalk into a world devastated by the climate crisis,
but to actively work to heal our world,
and move it towards a better balance of all four elements,
earth, water, fire and air -
within our trees, within our environment, within ourselves.
May it be so.

Peace and love to you.