Copernicus Was Mistaken

By

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Dedication

To my Tia Betty Quintana Martinez. Lead by example. Be like my Tia Betty, always be kind. To the plants and animals who inhabit this wonderful planet with us on our amazing journey through space and time. To our youth.

Preface

“During times of universal deceit, telling the truth becomes a revolutionary act”

-George Orwell

Copernicus was mistaken. There is no complex life in our solar system. This is the center of our universe because here there is life. In the pre-virus world, we learned a great deal from the few probes sent to Mars, Venus, the giant gas planets, moons and the asteroid belt. It has been fifty years since we landed men on the moon. We could not advance beyond Neil Armstrong’s observation, “that’s one small step for man and one giant leap for mankind.” Politicians killed the giant leap forward for humanity. With present propulsion technology, we cannot safely get to planets in our solar system, much less other star systems. We remain Earth bound creatures confined to our small planet.

Dumping plastic into the oceans is a well-known and much publicized disaster. Industrial pollution continues to be a big problem. Except Antarctica, rivers from every continent that empty into the oceans have dead zones. The planet is warming. Whether you believe fossil fuels is the primary cause or not, glaciers all over the world are melting. We are adding one million people to the planet every four days. Meanwhile more wildlife dies off. Despite our obvious need to cooperate, we spend trillions of dollars on war and very little on peace. Our global environmental problems can be solved virtually overnight if we just work together. It is not hopeless. Now with the pandemic, humans have to cooperate if we want to survive. Every part of the planet has been infected.

Since my last book in 2015, the world continues to have horrific conflicts. Syria and Libya come immediately to mind. Millions of refugees have flooded onto the world stage looking for safety and security. Millions more are looking for places to migrate to escape grinding poverty. Some are environmental refugees, fleeing climate change as they can no longer grow food in their home country. Over population has resulted in environmental destruction on a scale never seen before. Our mistreatment of nature has resulted in a zoonotic pandemic. This in turn has collapsed the entire global economic system. Hundreds of millions are now unemployed all over the world.

Military spending has not made life on our small planet more secure or solved our massive global environmental problems. The conflicts in Iraq, Syrian, Libyan, Yemen, Ukraine and elsewhere did not create more oil or new energy systems. Bombing families in over 26 counties created enemies with memories.

While no longer true, many people on our small planet still believe the United States is the greatest threat to world peace. Our great country has no credibility with the rest of the world. Our history of violence haunts us. Since

World War II, the United States bombed more nations, supported more dictators and invaded more countries than all other nations combined. From 1945 to 2015, the United States dropped more bombs on other nations than all ordnance used in World Wars I and II. Over 3,000,000 people have been killed by American-created conflicts and millions more have been wounded. We remain the most powerful nation in humanity's history. Endless war has not brought peace. That will change with the virus. Invisible enemies do not respond to bombs and bombastic threats from carnival barkers.

All 435 U.S. congressional districts have either a defense contractor or a military installation. As of 2020, the United States has over 5,000 military installations and/or bases in over 90 countries. The Department of Defense continues to be the nation's largest employer. The United States can't just "cut" defense spending. That would create more unemployment in thousands of communities. That is why we need economically viable alternatives to defense spending. Space and ocean exploration are the logical alternatives to war.

We have just begun to explore the ocean floor. If U.S. Navy contractors can build nuclear submarines, aircraft carrier battle groups and other warships, they can build ocean-mining exploration vessels. Robots can explore the ocean's bottom. Humans can't withstand the pressures from deep water. The United States has the resources to safely explore the oceans without the help of other nations. This will create entire new industries.

What will create the most jobs in this century is cleaning up the entire planet. The United States can lead the way out of this environmental quagmire. Cleanup is labor intensive. With hundreds of millions of unemployed, we have to create meaningful jobs and entire new industries. It took humanity at least 200 years to create the environmental mess we are in. Spending the next 20 to 30 years on repairing the damage all over the world will accomplish several things. The wildlife will come back.

To save the fish stocks from collapse, and the ocean's wildlife from extinction, we propose the creation of a Global High Seas Marine Preserve. We need to close off the high seas to commercial fishing. The U.S. Navy working with navies of other countries can enforce wildlife zones in the oceans. Ecosystems do not recognize national boundaries. Neither do viruses.

This pandemic is a warning from our Earth Mother. Change direction or become extinct. Human created environmental and pandemic problems have solutions. With governments, industry and non-profits all working together, we will change humanity's path to sustainability and co-existence with our Earth Mother's other children. Young people understand environmental problems. They are willing to make a difference. Be optimistic — the change begins with you.

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"***To look at the sky, and behold the wondrous heart of silence. I have thought, and studied, and worked for years, and I know so little — all I can do is to adore when I behold this unfailing regularity, the miraculous balance and perfect adaptation. The majesty of it all humbles me to dust***."

— ***Copernicus***

PART I

Why Copernicus Was Mistaken

Chapter One

Life on our Small Planet

"Above all, always be capable of feeling deeply any injustice committed against anyone, anywhere in the world. This is the most beautiful quality in a revolutionary."
- Che Guevara

Our Earth Mother is a living, breathing conscious being. We depend on her to survive. She does not need us. We need her. She has lungs, a nervous and digestive system and a very powerful immune system. The anatomy of our Earth Mother is slowly being understood. The oceans produce approximately half of our oxygen with phytoplankton[1]. The tiny single-celled plants of the sea that are the base of the marine food chain.[2] We do not know all the numerous species in the oceans. We are still learning. The forests are the nerves and are interconnected. They talk with each other with their roots and fungi.[3] They warn each other of predators and help their young.[4]

Our Earth Mother feeds us. The plants provide food for large creatures like elephants, rhinos, mountain gorillas and numerous other species. These massive creatures are strong from a plant-based diet. All of these creatures are physically stronger than frail little humans. Yet we kill them because we can, for "sport" or for their ivory tusks, their horns or their hides.

If we stop killing our animal brothers and sisters, we will have a healthier planet. Humans will be healthier with a plant-based diet. Many of our environmental problems are a result of diet.[5]

Killing the plants and animal brothers and sisters because we can, is a very bad idea. They are Earth Mother's other children. She protects them. This is why we have zoonotic viruses. These are literally our Earth Mother's white blood cells. Viruses have been around longer than humans have existed. Viruses can only be seen with an electron microscope. They are much smaller than bacteria.

> "Viruses are tinier: the largest of them are smaller than the smallest bacteria. All they have is a protein coat and a core of genetic material, either RNA or DNA. Unlike bacteria, viruses can't survive without a host. They can only reproduce by attaching themselves to cells. In most cases, they reprogram the cells to make new viruses until the cells burst and die. In other cases, they turn normal cells into malignant or cancerous cells."[6]

Our Earth Mother's majestic beauty is all around us. When we walk in the Redwood Forest, the giant trees look down on us as they literally scrape the sky. Some of these massive creatures are over 300 feet tall. They easily outlive frail humans. Many of these giants are hundreds of years old. Some trees live well over 1,000 years, 2,000 even 5,000 years old.[7] Forests covered a land area of approximately 40 percent of the surface of the Earth, 60 million kilometers. As the human population exploded in the

1850s, the forests were cut down for lumber, ship building and resource extraction. Today, less than half of these old growth forests remain.[8]

The giants haunting beauty is something you must experience. Words can't capture the moments you spend among them. The spirits of our Earth Mother live among the giant Redwoods. All you can hear is the whisper of the wind. It blows over head and moves the limbs of these giants. We are mere tiny creatures on the paths of the forest floor. We look up at them. They stare down at us. We are their killers. We murdered over 93 percent of them.[9] These giants were killed without cause.

Our problem is we humans have a view of other life forms as not being important. These giant Redwoods are persons. They are not people. Consequently, our killing of these living creatures is not viewed as something that is morally wrong. "Murder" is defined by the Free Dictionary:

> "The killing of another person without justification or excuse, especially the crime of killing a person with malice aforethought."[10]

Under this definition, humans killing plants and animals without cause or justification is murder. We just do not see this act of killing giant trees and/or animals as something that is morally wrong. There is nothing "wrong" with using plants, fish and herd animals for food provided we are respectful and keep our contract with nature. Take what we need to eat and nothing more and make certain we do not kill juveniles.

We just do not understand what we are doing to these persons and their families when we murder them. The plants and animals understand. They are protected by our great Earth Mother. When we mistreat our Earth Mother's other children, we will suffer the consequences. It is written in scripture: "Whatsoever you do to the least of my brothers, so you do unto me." Matthew 25-41-36.

A baby elephant will not leave his mother's side after a poacher has killed her in front of him for her tusks. This is true with other mammals we torture and slaughter. Just as humans are traumatized by the sudden untimely deaths of our parents killed for no reason in front of us, that same is true in the animal kingdom.[11]

We need to appreciate the incredible beauty of the natural world. Let's walk through some of the many places we have visited and look, listen and learn. A good place to start is a walk in the Redwood Forest in northern California.

The light green ferns on the forest floor hold moisture and beads of water. A variety of birds are in the bushes next to the stream and in the smaller trees trying to grow and get their share of sunshine. Hawks are flying overhead. Blue birds chatter and talk to the sparrows and black birds. All compete for insects and territory. The blue birds quarrel with the squirrels. The foxes look up at them amused. Other creatures momentarily watch the squirrels and blue birds arguing and shake their heads.[12]

Insects are buzzing back and forth close to the ground. The branches of these giants are up high absorbing the sunshine. Soil microarthropods consisting of mites, spiders, pseudo-scorpions, centipedes and other tiny creatures make their way among the leaves on the floor of the forest. The giant trees stay healthy from the rich soil of dead leaves and insects working on the ground. The micro-arthopods are important in controlling the decomposing leaves and in a functioning nutrient cycle. They keep the forest healthy. Fungi on and below the forest floor cleans the ecosystem. The mushrooms have numerous health properties we are still just discovering.[13]

The small light brown chipmunks scamper with their bushy fuzzy tails held up high. They burrow in holes next to the giant trees and fallen logs. They are busy moving seeds and helping to keep the forest clean. The larger grey colored squirrels are watching us from the safety of tree branches. The cool streams are full of life.

In the Pacific Ocean next to the coastal Redwoods, the water is teeming with numerous fish species include salmon, abalone, sea bass, rockfish, mussels, spiny lobster, Dungeness crab, surfperch, halibut, numerous species of shark, scorpionfish, lingcod, Cabezon, rockfish and other sea creatures.[14]

In the bay next to the forest, are 50-foot dark grey Humpback whales swimming in the distance. We believe that approximately 90 percent of them were murdered during the whaling era. These baleen creatures swallow schools of fish during the summer feeding season. These giants have a range of approximately 16,000 miles. They communicate with one another using loud low-pitched sounds that travel for several miles. Their whale songs are to attract females.[15] We humans have not learned their language code. We cannot communicate directly with these ocean giants.

Tourists in small boats gawk at the incredible display of wildlife. Humpback whales were a popular tourist attraction in the pre-virus world. Winter months provided tourists an opportunity to enjoy the sight of these magnificent creatures. When whale hunting was allowed in the 1800s, these slow-moving creatures were no match for vicious humans in faster boats.[16]

Humans murdered hundreds of thousands of whales. Today, the killing has not stopped despite international outcry. Japan, Russia, Iceland and others continue to murder whales under the false claim of cultural tradition and “research”. A Southern Ocean Marine Sanctuary in Antarctica bans killing these rare creatures. Established in 1994, it bans commercial whaling in a 50-million-kilometer preserve.[17]

Wild salmon are the base prey. They provide the framework for the entire ecosystem. Salmon protein makes life in the entire ecosystem possible.[18] The wild salmon are pursued by killer whales. The otters and sea lions feed on the salmon. All predators compete for salmon protein provided by this once abundant fish species. The plants depend on the salmon’s nutrients when they die, and their bodies decompose.

The wild salmon are being decimated by the farm raised franken fish that pretend to be salmon. As the wild salmon die, the entire ecosystem suffers. Consequently, many other species that depend on the wild salmon will not survive.[19]

Giant greenish yellow kelp forests fill the waters offshore from Baja California to the farthest Aleutian Islands. Some of the kelp rise up over 115 feet high from the ocean floor. Divers describe the kelp forests as if they are swimming through underwater Redwoods. The kelp forests are teeming with different types of sea creatures.[20]

On land, majestic bull elk with their large antlers compete for mating opportunities with the herd of cows feeding in the meadows eating lush grasses. Tourists look on from the safety of a fenced off road next to a campsite. The humans are from all over the United States, Europe and Asia. They take photos with their cell phone cameras. The bison are no longer free to roam in the meadows. They exist but only in fenced areas. Mule deer are up higher in the distance hillside. The mountain lions and coyotes are out there. They are smart. They remain hidden from view and stay clear of their human enemies. Raccoons try to open the chained garbage cans or pick up free meals from unsuspecting tourists not guarding their campsites. Ants march under the tables oblivious to what humans are doing above them. The owls look on from high in their nests. Eagles look for rodents as they circle overhead. The forest is alive.[21]

Hanauma Bay, the Virgin Islands, Cancun or any of several beautiful places on our small planet have coral reefs that have been around for centuries. Numerous species of fish swim around us. The variety of species of fish are not be as abundant or

colorful as they once were. The difference in the health of the coral reefs over the last 30 years in tragic. The reefs are not as colorful, healthy and these ancient creatures that have been around much longer than humans, are dying.[22] Many of these fish are curious. They swim up, look at us and wonder what we are doing in their world.

Sharks of various types are in every ocean. These apex predators have been on Earth for over 400 million years. Some sharks are this greyish green color, beautiful, curious amazing creatures. Sharks are true scavengers who keep the oceans clean and healthy. If it is dead or dying and it is in the oceans, you will find sharks. These creatures are the oceans' janitors and predators. They are the white blood cells of the oceans. Prior to the pandemic humans were killing over 200,000 sharks each day for shark fin soup. Less than ten people a year are killed by sharks. The international waters of the seemingly vast oceans offer little protection under international law for these magnificent creatures.[23] We mistakenly believe the oceans are so vast that we cannot possibly kill all of these creatures. But we are. From the shore we cannot see the massive damage that is taking place under the water by reckless human activity.

In the remaining jungles of central Africa live chimpanzees and mountain gorillas. Primates are supposed to be protected in national parks when laws against poaching are enforced. These primates share space with a variety of plants and animals from the lush rain forests. Chimpanzees share similar DNA with humans. At least 98 percent of a chimp's DNA is similar to that of humans.[24] They are amazingly smart animals. They exist in social groups. Like other animals, they have communication which humans do not yet understand. More study and conservation are required or our primate relatives will become extinct.

On the plains of Africa are lions, zebras, giraffes, hyaenas, elephants, black mambas and a variety of other exotic creatures. Flies and other insects share this space. Plants, animals and insects still exist despite the massive environmental problems we have created. They are in competition with us for land area. Humans are not endangered. We have over populated. We are adding over one million people to our small planet every four days. There are now well over 7.8 billion humans.[25]

Our cities are bursting at the seams with millions of people. Prior to the pandemic, on any summer day, people were walking their dogs, laughing, playing in public parks and enjoying all that life offered. Everywhere on our small planet there is a variety of life. We do not know all of the species that share this small planet with us.

In the pre-virus world, vacations to various parts of our small planet was possible because of incredible improvements in technology. Over 500 years ago, when our ancestors left Europe and Asia in what today are small wooden boats, the world was a much larger place. Travel was very dangerous. A trip away from home probably only took place once in a lifetime. When our ancestors waived good bye, via con Dios, it was good bye, forever. Today we have telephones and live facetime video conferences. Or, we just hop on a plane and visit.

Our vast improvements in technology made possible the enjoyment of nice restaurants while we dined next to the ocean. We ate freshly cooked seafood. We drank coffee from Peru, Costa Rica, Egypt, Hawaii. We enjoyed fine Spanish wine as the sea breezes cooled off a hot summer afternoon. From the comfort of our tables we looked out into the distance waters. We watched spinner dolphins jump into the air while surfers rode waves to shore. Our fine seafood was served by a waitress from the Philippines. The meal was prepared by a Mexican cook. The hostess was from the Ukraine. Next to us were Japanese tourists. Next to them were an elderly German couple.

We drove away from the fine restaurant in a modern vehicle that in another age would have seemed like alien spacecraft. At our beautiful condo, there was a security guard at the entrance. A coded key gets you in. Once inside the warm condo, a hot shower was available or we could get in the hot tub. If you felt like swimming, head down to the common area and jump into the heated pool. After a nice swim, you could watch a variety of shows on television and listen to every type of music imaginable. Food from every part of the planet was so abundant obesity was now a bigger problem than global hunger. Our first world human problems were usually a matter of perception, not of survival.

We took the existence of life on Earth for granted and did not respect other persons' right to co-exist. We failed to realize how unique life really is on this planet. Only here on this planet in our solar system there is complex life. We became callous and indifferent to the natural world. We did not care about the other passengers on spaceship Earth.

The consumption, murder other plants and animals, way of life ended in November 2019. Nature fought back. In that month, our Earth Mother's immune system struck back. Her white blood cells, known to us as viruses attacked. Viruses are a normal occurrence. They are a means by which our Earth Mother protects her other children.[26] We cannot constantly kill the other persons on spaceship Earth and believe they will not try to defend themselves. The other persons on this small planet don't have opposable thumbs. But they are protected by our Earth Mother's immune system-viruses.[27] This pandemic is just the first wave. Either we will change our behavior or our Earth Mother will make us go extinct. We have committed mass murder of many of the other persons on this spaceship traveling through space and time.

Chapter Two

A Long Way From Home

The shortest distance between two points is often unbearable
-Charles Bukowski

Humans have conquered the land, exploited the seas and believe that space is the last frontier. We have sent less than 200 probes out to the planets in our solar system. The evidence is overwhelming. We are alone in our solar system. Are we alone in the universe? Is the Earth the center of the universe because only here there is life? These questions have haunted us since we invented fire and writing.

From the time humans were first placed here on Earth, man looked out at the cosmos in wonder and trepidation. In antiquity, life was short, hard and mysterious. What were these bright lights in the night sky? Why did the moon appear and then disappear? How did the natural world work? What caused wind, earthquakes, storms? What prayers or offerings could be made to the deities for crops to grow, to have a successful hunt? What magic words could heal wounds or enable a loved one to recover from an illness? Would the Gods intervene to protect us from our enemies? The stars were where the Gods lived. These mysterious deities could help or hurt us. As human civilization evolved so did our knowledge of the heavens.

Stone age civilizations tried to make sense of it all. Each culture has their own cosmic paradigm and creation mythology. The Mayans' world view differed from the Europeans, which differed from the Arabs and Persians, which differed from the Chinese, the Indians and others. There were some common themes. The ancients studied the heavens to keep track of time and develop calendars to help predict the weather.[1]

Early civilizations saw a similar night sky to the one we see today. Unlike today's scientists, the ancients had limited technology. Before Galileo, planets were named for Roman gods". The Roman ones we know them by are still with us today.[2] The observations of ancient astronomers were based upon their ability to see what was in the night sky.

The ancient Greco/Roman cosmic paradigm developed with human vision became the established Western model. These observations created the view that our Earth was the center of the universe.[3] This geocentric Model made sense for a variety of reasons. The world was a much bigger place 2,000 years ago. Travel between these distant bronze age cities was on foot, horse or if by sea, sailing with the wind. Technology was limited. Travel was dangerous and distances were vast. The cultures differed from each other.

The ancient Roman world was brutish and short. Death was a constant. It made sense to believe the Earth was the center of the universe. Travel to other star systems was impossible. The “gods” controlled forces of nature that were beyond human comprehension. Human populations were much smaller than today. Despite these limitations, the Greco/Roman world had scholars who tried to understand the heavens and created the Earth centered geocentric model.

Claudius Ptolemy is considered by Western scholarship to be the father of this Earth centered model. He was a mathematician and one of the western world’s first known astronomers.[4] He was the author of the most important book on astronomy of the ancient world. His book, the Almagest, created the paradigm for Western thought about astronomy that was the accepted world view for over 1,500 years.[5]

Ptolemy did not have the advantage of the tools of modern science. The telescope had not been invented yet. Observation of the heavens was limited to human vision. While careful measurements were made, given the inability of humans to see far, these observations were bound to be inaccurate.

Civilizations were in their infancy. Ptolemy borrowed from the older Egyptian and Babylonian astronomers.[6] His geocentric world view with the Earth as the center of the universe was logical given the reality and technology of that era. The human population was still relatively small. At the time of Ptolemy, some estimates have as little as 300 million people over the entire planet.[7] The world was a mysterious huge place with most of it unexplored.

2,000 years ago...at the dawn of the first millennium A.D. the world's population was around 300 million people.[8]

Humanity struggled along for over millennia with civilizations and empires rising and falling. Eventually, a few brave explorers ventured into the vast unknown. These explorations led advances in science and economics. The Spanish explorations resulted

in conquests of the Mesoamerican empires of the Aztecs and Incas. Tremendous wealth was brought back to Europe. The gold from the Aztecs and sliver from the Incas revived the European economy and led to the Renaissance. This paradigm shift set the groundwork for the Age of Discovery, wonderful new inventions and creative ideas.[9]

The known universe was still seen in the European world through the eyes of Ptolemy's geocentric model. The Earth continued to be the center of the known universe. The Ptolemy geocentric cosmic paradigm changed with the observations of Nicolaus Copernicus in the 1500s.[10]

This Polish scholar was a true Renaissance man. He was fluent in Latin, German, Greek, Italian and his native Polish language. He also understood Hebrew and his math skills created a new paradigm that replaced the geocentric model of Ptolemy.[11]

Copernicus understood the dominance of the Catholic Church. Not wanting to be tortured by the Roman Inquisition, he kept quiet about his discovery. The Earth was one planet like other planets and circled around the sun. He was brilliant and politically astute.

Copernicus' major work on his heliocentric theory *Dē revolutionibus orbium coelestium* (*On the Revolutions of the Celestial Spheres*), was not published until he was on his deathbed in 1543[12] The now famous book was not controversial when it was first published. This was probably due to the scholar's death. His theories did not die with him. This heliocentric view of the universe became controversial. As more scholars studied it, in time this led to a complete paradigm shift in the European view of the cosmos.

The Almagest's Universe

The Copernicus world view turned Ptolemy's geocentric model on its head. Humans were no longer the most important beings in the universe. The Earth lost its' biblical importance. These writings were considered blasphemy. The major features of the Copernican theory which altered our view of the universe are:

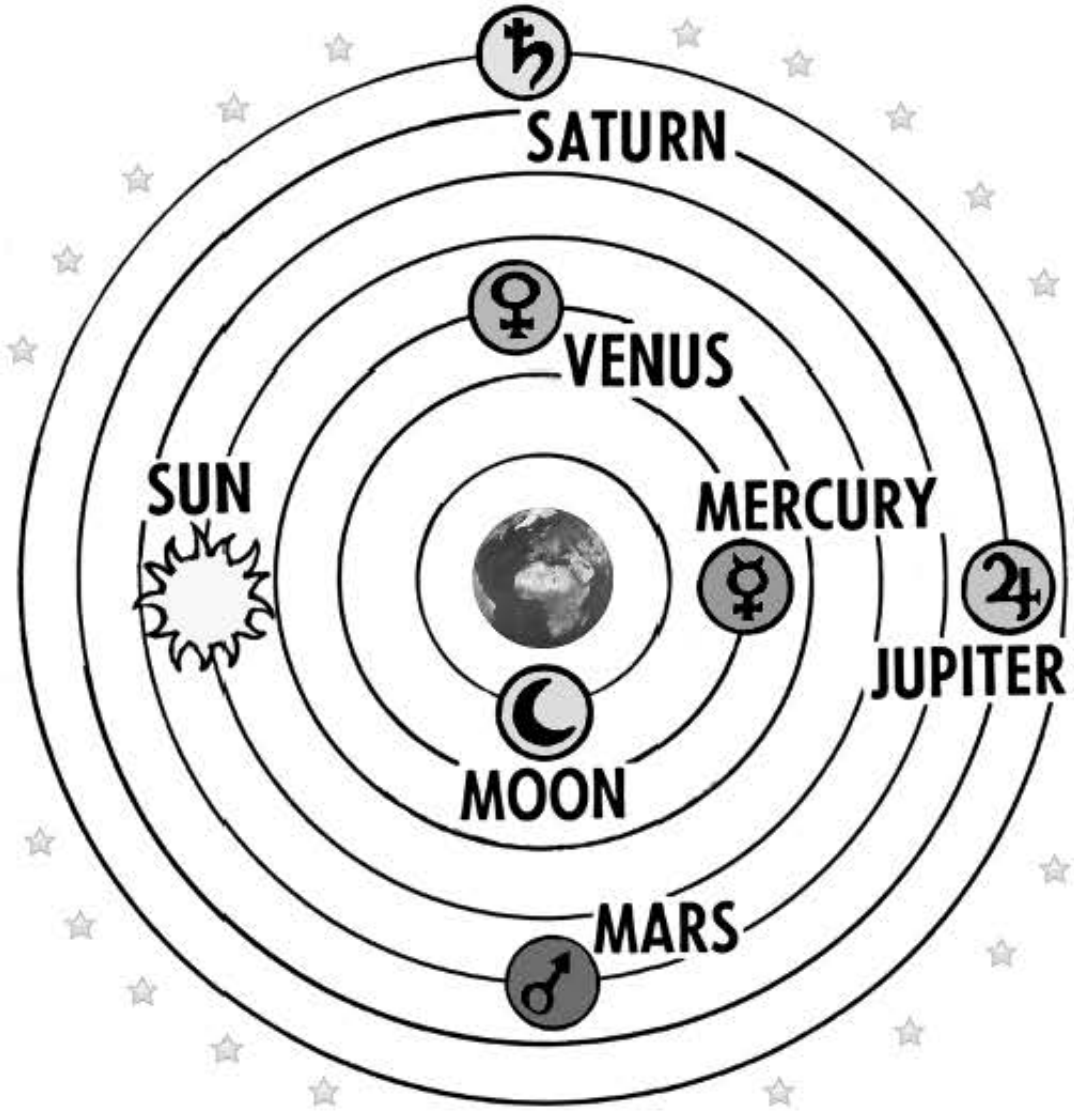
1. Heavenly motions are uniform, eternal, and circular or compounded of several circles (epicycles).
2. The center of the universe is near the Sun.
3. Around the Sun, in order, are Mercury, Venus, the Earth and Moon, Mars, Jupiter, Saturn, and the fixed stars.
4. The Earth has three motions: daily rotation, annual revolution, and annual tilting of its axis.
5. Retrograde motion of the planets is explained by the Earth's motion.
6. The distance from the Earth to the Sun is small compared to the distance to the stars.[13]

It was not unreasonable for Nicholas Copernicus to be cautious regarding his views on the cosmos. The Catholic Church had their own views of man's place in the

universe. The Earth was at the center and man was created in God's own image. This view, although nowhere in the Bible does it specifically say the Earth is the center of the universe.

Ptolemy's Universe

Ptolemy proposed a universe consisting of nested spheres containing the heavenly bodies.[14] The Church had simply adopted the Ptolemy Geocentric view and any other opinion was not acceptable. Therefore, the Copernicus' Heliocentric model would make the Earth just another heavenly body. Human importance would be downgraded, this was an insult to God. Other scholars were not as careful.



Chapter Three

Religion and Science Don't Mix
-Giordano Bruno

Giordano Bruno was born in 1548 and is often mistakenly considered the "martyr of science". He was a free thinker born in the wrong century and in the wrong place in history. This handsome Italian scholar was obviously brilliant but not practical. A Dominican friar, philosopher, mathematician, poet and cosmological theorist, he committed the sin of all sins. He denied the divinity of Jesus, the virginity of Mary and was a Hermetic occultist.[1]

Bruno proposed that stars were distant suns. These stars were surrounded by their own planets. These too might foster life. He believed the universe was infinite. There was no "center".[2] Brilliance is a blessing but it has to be coupled with being practical and not picking fights that cannot be won. Bruno was charged with these crimes by the Roman Inquisition:

-holding opinions contrary to the Catholic faith and speaking against it and its ministers;
-holding opinions contrary to the Catholic faith about the Trinity, divinity of Christ, and Incarnation;
-holding opinions contrary to the Catholic faith pertaining to Jesus as Christ;
-holding opinions contrary to the Catholic faith regarding the virginity of Mary, mother of Jesus;
-holding opinions contrary to the Catholic faith about both Transubstantiation and Mass;
-***claiming the existence of a* plurality of worlds *and* their eternity*; (emphasis mine).***
-believing in metempsychosis and in the transmigration of the human soul into brutes;
-dealing in magics and divination.[3]

Bruno was imprisoned for seven years before being burned at the stake. He defended himself insisting he accepted the Church's dogmatic teachings by trying to preserve the basis of his philosophy. In particular, he held firm to his belief in the plurality of worlds, although he was admonished to abandon it. He believed that "the universe was not capable of comprehension and therefore is endless and limitless, and to that extent infinite and indeterminable, and consequently immobile."[4] He was the first known person in the Western world to grasp the concept that stars were other suns. This view of the universe was unacceptable to the Catholic Church.

His trial was overseen by the Inquisitor Cardinal Bellarmine, who demanded a full recantation. Bruno refused. On 20 January 1600, Pope Clement VIII declared Bruno a heretic. The Inquisition issued a sentence of death. According to the correspondence of Gaspar Schopp of Breslau, he is said to have made a threatening gesture towards his judges and to have replied: *Maiori forsan cum timore sententiam in me fertis quam*

ego accipiam ("Perhaps you pronounce this sentence against me with greater fear than I receive it").[5]

On Ash Wednesday, 17 February 1600, in the Campo de' Fiori (a central Roman market square), with his "tongue imprisoned because of his wicked words", he was hung upside down naked before finally being burned at the stake. His ashes were thrown into the Tiber river.[6]

Bruno's torturous death by burning at the stake had the effect it was supposed to on other scholars. It influenced Galileo Galilei, the father of the scientific method and observational astronomy. Galileo too was tried by the Roman Inquisition but unlike Bruno, he swallowed his pride and recanted.[7]

Galileo did not invent the telescope. He improved it.[8] He was a very clever engineer and built one with 30 times power. Galileo commented regarding planetary motion and was an accomplished scientist. The telescope transformed our view of the heavens. Galileo charted the planets, their paths, the phases of the moon, and proved the reality of Earth being one planet among many.[9]

Thirty-two years after Bruno was burned at the stake, in 1632 Galileo was hauled before the Inquisition in Rome. He appeared before ten judges at that same spot where Bruno had heard his sentence of death. The Inquisition accused Galileo of having violated the Church ruling of 1616. It insisted he refrain from "teaching or discussing" Copernicanism. Galileo recanted his beliefs that the Earth moved around the sun. His sentence of imprisonment was changed to banishment. He was ordered to recite once a week for three years the seven Penitential Psalms and remained confined to his estate just outside Florence until his death in 1642.[10] After Galileo, other scholars continued Copernicus' work. They too had the benefit of the telescope. As these telescopes improved, so did our knowledge of the heavens.

Johannes Kepler had the good fortune to not live under the control of the Catholic kings. Using the work of unknown scholar Tycho Brahe, Kepler proved once and for all that Copernicus' work was more accurate than the Ptolemy geocentric model.[11]

Kepler's laws of planetary motion describing the motion of planets around the Sun and were published between 1609 and 1619. These improved the heliocentric theory of Nicolaus Copernicus, replacing its circular orbits with epicycles with elliptical trajectories, and explaining how planetary velocities vary.[12]

The elliptical orbits of planets were indicated by calculations of the orbit of Mars. From this, Kepler concluded that other bodies in the Solar System, including those farther away from the Sun, also have elliptical orbits. The second law helps to establish that when a planet is closer to the Sun, it travels faster. The third law expresses that the further a planet is from the Sun, the longer its orbit, and vice versa.[13]

Kepler's laws of planetary motion laid some of the foundations for the scholarship of Sir Isaac Newton.[14] The father of modern science, Newton showed that the laws of

motion, combined with his law of universal gravitation, explained Kepler's laws of planetary motion.[15] Newtonian physics became the framework for modern science.[16]

Albert Einstein stood on the shoulders of Newton and took the Newtonian model to a whole new level with his theory of relativity. We learned from Einstein that we have to look at time not as an isolated event, but as space-time.[17] Einstein admired the work of Newton and had this to say about him:

> "Enough of this! Newton, forgive me; you found the only way which, in your age, was just about possible for a man of highest thought – and creative power. The concepts, which you created, are even today still guiding our thinking in physics, although we now know that they will have to be replaced by others farther removed from the sphere of immediate experience if we aim at a more profound understanding of relationships".[18]

Chapter Four

RIGHT SCIENCE- WRONG MESSAGE

One reason the Ptolemy model of a geocentric universe held up for so long is the telescope had not yet been invented. If Ptolemy had a telescope, his cosmic paradigm would have been different. Our perception of reality is limited and based on technology. Obviously limits to perception limits understanding. Whether it is perception of the heavens or of the oceans, technology helps out. For a short while, the Milky Way galaxy was considered the center of the universe.[1] Our cosmic paradigm was again modified with the discoveries of the Hubble telescope. The Milky Way being the center of the universe died with the discoveries of Edwin Hubble. We learned the universe is much larger. There are billions of galaxies and hundreds of billions of planets. In fact, the universe is expanding. Bruno, it turns out, was right.[2]

Today, our cosmic paradigm is: our Earth is one tiny planet in a galaxy with hundreds of billions of stars and planets and hundreds of billions of galaxies. Its theoretically possible that the universe is part of a multi-verse. This present and constantly changing Copernican, Galileo, Kepler, Newton, Einstein, Hubble paradigm with the Earth being a tiny planet in a large and expanding universe does not even address dark matter, string theory or quantum physics. Under this model, the Earth is not the center of a vast expanding universe.

Copernicus and the other great scholars who followed him are right for now about the math and science. Our tiny planet is in the Goldilocks zone, just the right distance from the sun. This solar system is on the edge of a great galaxy, the Milky Way. And this galaxy is one of hundreds of billions of galaxies in an expanding universe. But that does not change the reality of life. Here on Earth, on our tiny planet, there is life and plenty of it. If there is other life in our solar system, we have not found it yet. We are all alone in a vast universe.

These great scientific minds have relegated complex life on Earth to a very minor place in the universe. It is as life on Earth does not matter because the universe is so massive. After all, there are hundreds of billions of planets. There might be billions of lifeforms out there.

This cosmic paradigm overlooks the importance of all life on Earth. Copernicus and those who followed him were mistaken about the Earth not being the center of the universe for two very big reasons. First, humans cannot at the present time leave this small planet and colonize other worlds. We talk about colonizing other worlds and have for the last 70 years we have had rockets. But unlike the Spaniards, Portuguese, French, British, Chinese and other explorer tribes during the Age of Discovery, we cannot send humans to other planets. At the present time, we do not have the technology to safely get humans to and from Mars or any other planet or moons of a planet. We do talk about space travel. The reality is, we can barely get to the moon. We

are stuck on Earth until we develop better space propulsion technology. Again, there is lots of plans but no results. We have not returned to the moon and we have not sent humans to Mars. The proof is in the results.

The second reason Earth is the center of the universe is more basic. Here we know there is the existence of complex life. This reality of living creatures is overlooked or ignored by the cosmic paradigm that we are one planet among billions of planets. It is as if life here is not important. The Earth is the "center" of *our* universe for many reasons that are relevant to our survival. This small blue dot is our home. Life on Earth is what matters. Here there are millions of forms of life, complex and quite beautiful. We do not know all the species of plants and animals that share this incredible alive planet with us. We are still discovering new life forms deep under the unexplored oceans.

This Western paradigm of life on Earth, with humans being the only important animal, is not shared by other cultures. In the Native American cultures, all life has importance. According to Professor Terry LeBlanc, a Canadian Native American theologian, animals are "persons but not people".[3] The Native American paradigm of all life being important is superior to the Western view of man at the top of creation and gives little value to other species. The Copernican view fuels this disregard for other life forms.

We can declare any place to be the "center of the universe". If we wanted we could declare Proxima Centuri, Kepler 22B, Betelejuse, N22 or even Mars to be the "center of the universe". The math would be more complex but still accurate. Declaring any place to be the "center" is a purely subjective interpretation of reality. Or we could just pontificate that there is no "center of the universe". It is a matter of perspective but one that is important. As a practical matter, Earth is the center of our universe.

HUMAN EXPLORATION OF THE UNIVERSE

Our limited explorations of outer space over the last 500 years have revealed there is no complex life of any kind in our solar system.[4] On a dark night, we can see the moon, planets and numerous stars in the heavens. The moon, our nearest heavenly neighbor, has had only 12 human visitors, all male and all Americans.[5] The last human to visit the moon was American Eugene Cernan on December 14, 1972.[6]

The moon race to our nearest heavenly neighbor was a political decision. There is no immediate return on investment in the short run in colonizing the moon. It is expensive to get there, and no investment bank perceives a large enough economic benefit to underwrite a journey. The United States and the Soviet Union raced to the moon for political reasons, basically to show off. After the United States won the race to this dead rock, humans never returned. There was no gold rush like occurred with numerous human explorations.

Why did we not colonize the moon, which is approximately 250,000 miles, (384,000 kilometers) away?[7] The moon is not habitable. There is no atmosphere, it is

freezing cold and subject to intense radiation. Moon dust, regolith causes havoc with equipment. The regolith is sharp and can jam equipment as well as get into the spacesuits. It will cause health problems if you are unlucky enough to breath moon dust.[8] Building a “moon base” is a stretch of the political imagination. We will talk about it and when a new administration takes office, the goals of the space program will once again change. There is no continuity because colonizing the moon is not a joint human objective.

Over the last 70 years, less than 100 probes have successfully landed on other planets, moons and asteroids.[9] We do not have the technology to get to another planet in a reasonable time frame, much less another star system. The U.S. Voyager 1 has left our solar system. This probe will not reach another star for at least 40,000 years.[10] Humans have not had meaningful civilization for anywhere near that long. We have no idea what human civilization will be like in 40,000 years or if we will even survive our own vicious, barbaric tribal behavior. While we have made progress in travel and communication on our small planet, other star systems are impossibly far away. These distant worlds are out of reach. Proxima Centuri, our nearest neighbor and is 4.2 light years away.[11] Lest we forget, a light year is over 5.855 Trillion miles.[12]

These distances are so vast, we are not even remotely close to sending humans to other star systems. Our rocket propulsion technology is just too slow and primitive. We can see these planets and stars as we look out at the night sky. But we just can’t get there with present technology. We are stranded here on Earth with God’s other plants and animals. This is a good thing. Our exploration of the land area on Earth is complete. But that is about it. We have not even come close to fully exploring our solar system. Space exploration is still in its infancy. The few scientific probes we have sent to planets, asteroids and moons in our solar system has revealed it is devoid of all complex life.[13] It appears that we are alone on planet Earth.

We have made little progress in rocket propulsion technology. Like the gas combustion engine from the turn of the last century that depends on fossil fuels, rockets still depend on controlled chemical explosions. Launches to Earth orbit and beyond may seem routine but it is very dangerous. Nine nations can launch satellites into Earth orbit. Fewer still have been able to send probes to other planets. Even less can send humans to outer space. Only the United States, Russia and China have the ability to send humans into space.[14] The exploration of space, the last frontier has just begun.

Humanity’s political situation today is like Europe’s plight in the early 1500s at the dawn of the Age of Discovery. Spain, Portugal, France, Britain and other countries knew there was a whole planet out there to explore. But these tribes were so busy fighting among themselves they missed an opportunity to cooperate. European tribal fighting eventually led to two largely European world wars. Colonization of other parts of our small planet ended. Global cooperation did not replace ancient tribal behaviors.

The United States, Russia, China, the nations of the European Union all know there is a solar system out there waiting to be explored, mined and exploited for profit.

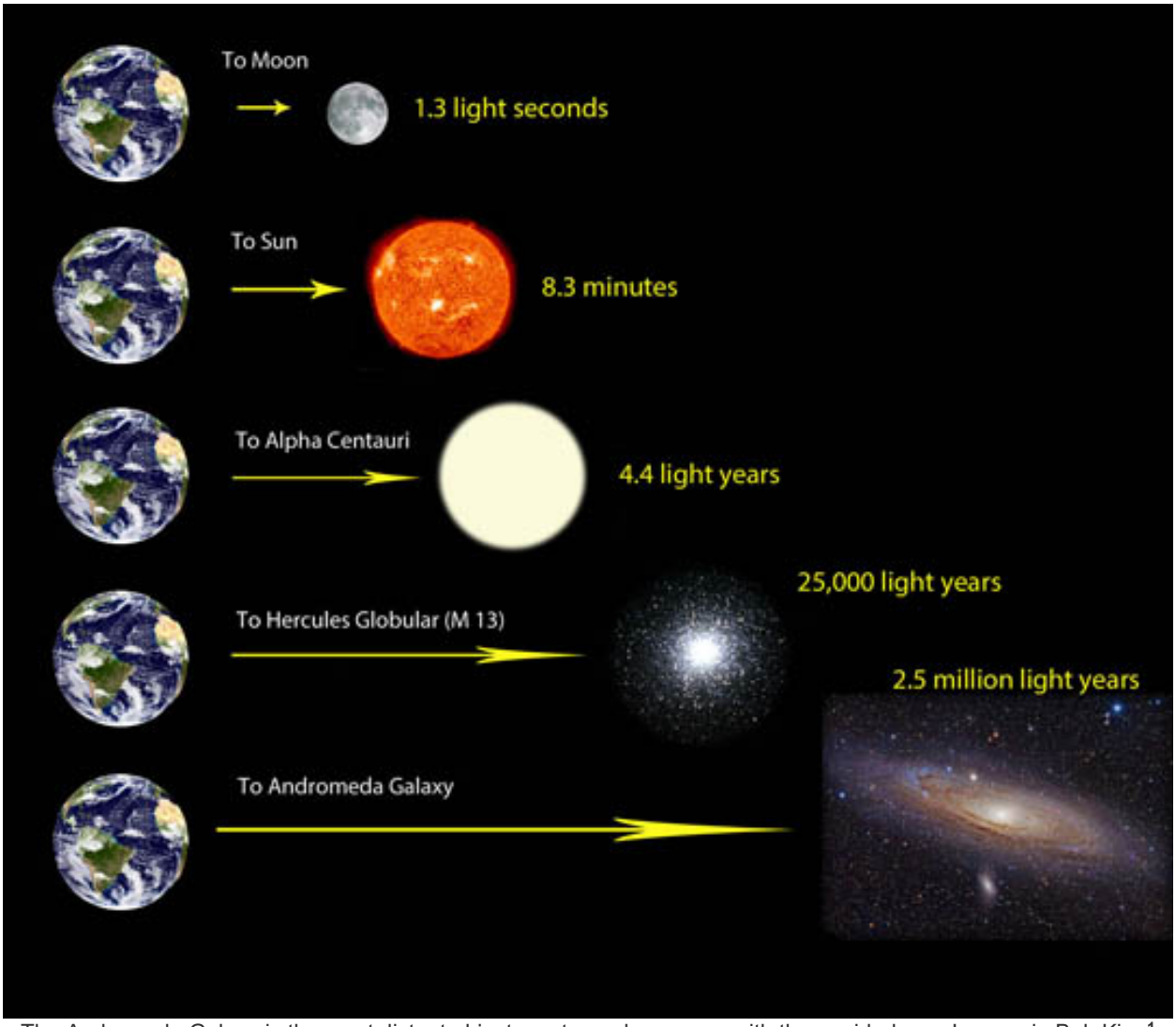
But, with a lack of meaningful cooperation, humans do not have the means to colonize other planets. It is extremely difficult to just get humans to the International Space Station, much less build a moon base or God forbid, a joint human expedition to land on Mars. There is not one global agreed upon plan for space exploration. We remain so tribal we are still pointing nuclear weapons at each other despite the obvious danger of an accident.

The minor exploration of the inner solar system with less than 100 probes, powerful telescopes and computer analysis has revealed, there are no habitable planets or moons in our solar system. Complex life is exclusive to Earth, our home and center of our universe. This is why we need to continue to explore our solar system. We need to learn everything we can about these dead worlds so we can preserve life here. Why is there no complex life in our solar system? These other worlds are dead. Could that happen to us?

A brief look at these other planets reveals why we must protect our home. Our Earth is precious and full of life. These planets are hot and cold dead rocks.

Chapter Five

Uninhabitable Worlds



The Andromeda Galaxy is the most distant object most people can see with the unaided eye. Image via Bob King[1]

MERCURY- is named after the winged Roman god of travel. The exploration of Mercury has been limited to three flyby missions of the Mariner 10 U.S. probe in 1974.[2] With such close proximity to the sun, the science reveals this planet is a hot rock devoid of any complex life. There is no scientific reason to send humans to Mercury. Our telescopes and the flyby mission of Mariner 10 have revealed there is no life or possibility of complex life on this hot dead planet.

The small planet similar in size to the Moon with many creators, is over 250 degrees Fahrenheit and the thinnest atmosphere in the solar system. The second human probe to explore Mercury was the Messenger spacecraft in 2011. Once again, it revealed the obvious, there is no life of any kind.[3]

Just like the ancients, we can see this planet in the night sky. Even if we had the propulsion technology, there is no reason for humans to visit. We can and should continue to send robots equipped with complex instruments to learn and carefully study its thin atmosphere and geology. Working with the European Space Agency, the Russians, Chinese and other nations, we must fully explore this hot dead planet.

Exploring Mercury will lead to the development of better material and propulsion technologies. We will need these heat resistant materials to land on other planets, moons and eventually for interstellar travel. The close proximity to the sun has resulted in no complex life on Mercury.

If you wanted to sit on your balcony and drink coffee while you look out at a beautiful blue ocean, with boats in a harbor, people sailing, surfing or just relaxing enjoying the sun, this planet is not the vacation spot for you. Even if we could send humans to Mercury, what would they do there? Unlike being at the beach with palm trees and swimming pools, there is nothing to do on Mercury other than try to stay alive long enough to leave.

We can explore this burning hot planet and possibly mine it by using artificial intelligence and robotics. Mining of other planets will create entire new industries and millions of exciting jobs. Space mining will be an industry of the future. Mercury should never be colonized.

VENUS- this planet is named for the Roman goddess of love. There is no love on this boiling hot heavenly body. The Soviet Union sent several probes to Venus and vastly expanded our knowledge of this planet. Venus is similar in size to Earth. The Soviet Venera program was the largest human effort to explore another planet. The Soviet program launched 16 probes from 1961 to 1985.[49] Among the successes were the only landings on that planet. The Soviet Union collapsed in 1991. While there was discussion of a joint Russian American mission, those talks don't appear to be going anywhere anytime soon.[4]

We learned from 38 Russian, American, European Union and Japanese probes that this planet is way too hot for human colonization.[5] The planet has a runaway greenhouse effect. At over 860 degrees Fahrenheit, even our robots cannot survive longer than a few minutes. We can develop better robots and materials so they will last longer and withstand the heat.

Venus is similar in size to Earth. There the similarity ends. Venus has a ground temperature so hot it can melt lead. We need to learn everything about what caused Venus' climate to change and this planet to heat up to where no complex life exists here. Our planet is experiencing the start of a greenhouse effect. Exploring this planet will provide valuable information on the greenhouse effect from CO^2 that might save life here. The climate changed on Venus. Its' doubtful it was always this hot. We need to discover when, how and why. If there is life on Venus, it is probably not complex.

Traveling to Venus on vacation is a bad idea on every level. Virgin Galactic will not be taking tourists there anytime soon. Even if humans could travel to Venus, like Mercury, there is absolutely nothing to do on this hot rock. You can't go there for dinner overlooking the ocean or go sailing right before sundown. There will not be dolphins swimming next to your spaceship. You will not be drinking fine wine, eating grapes and discussing sports.

Venus is about as close to Dante's description of hell as you can get. This planet is a nightmare. When we send robots, it will be difficult to get messages back to Earth. Our exploration will require entirely new types of materials to be developed to withstand the incredible heat and surface pressure. There is simply no reason whatsoever to send humans to Venus. Exploring Venus and other planets will cause vast improvements in robotics and artificial intelligence. Obviously, humans should never colonize Venus.

MARS – is named after the Roman god of war. It is the dream of many visionaries. We know quite a bit about Mars. The dream is this cold dead planet will become a second home for humanity. Mars has a 24-hour day, less gravity, and ice at the poles. The Soviet Union crash landed the first human probe on Mars in 1971.[6] Since then, we have had 26 successful landings and numerous failed missions.[7] We must keep trying. As technology improves, one day soon, humans will land here. There are plenty of plans to land humans on Mars. These plans have been in the pipeline for decades. They change every four years. But talk is cheap. Traveling to this distant world will be extremely difficult.

Unlike Venus or Mercury, Mars is not completely hostile to human visitors. But it is a stretch of the imagination to think we will colonize this dead planet anytime soon. Exploring, terraforming and colonizing Mars is the goal of the Mars Society and space advocates everywhere.

Rocket propulsion technology and robotics will improve. We will send humans to Mars. In time probably over the next 500 years, we will terraform it. One day humans will colonize the Red planet. In the immediate future, we will have more successful landings. The Mars Society has been advocating the colonization of Mars for over two decades. Numerous administrations have come and gone. Each new administration changes the policy of the last one. Consequently, humans have not made the journey. Exploring Mars has never been a global human priority. Instead, we have squandered billions of dollars on unnecessary tribal wars.

Exploration of Mars and the solar system is very important for protecting life on Earth. We need to redirect human anger and energy away from our planet or we will kill each other, and many life forms will die with us. A joint human space effort to explore, terraform and colonize Mars might save us from ourselves. We are once again on the very edge of a global world war. We need to redirect our aggressive behavior away from the planet. To do this will require lots of global scientific cooperation.

We need to discover why Mars lost its atmosphere and water no longer flows. Our atmosphere is in trouble. We continue to dump CO and CO2 into the atmosphere despite the obvious damage it does to the ocean life by making the water more acidic. We stopped dumping chlorofluorocarbons such as Freon into the atmosphere when we discovered these chemicals were burning a hole in the ozone. Was Mars once alive or at least had the start of what would have supported life? We just don't know. We have done nowhere near enough scientific study to fully understand what happened, when and how.

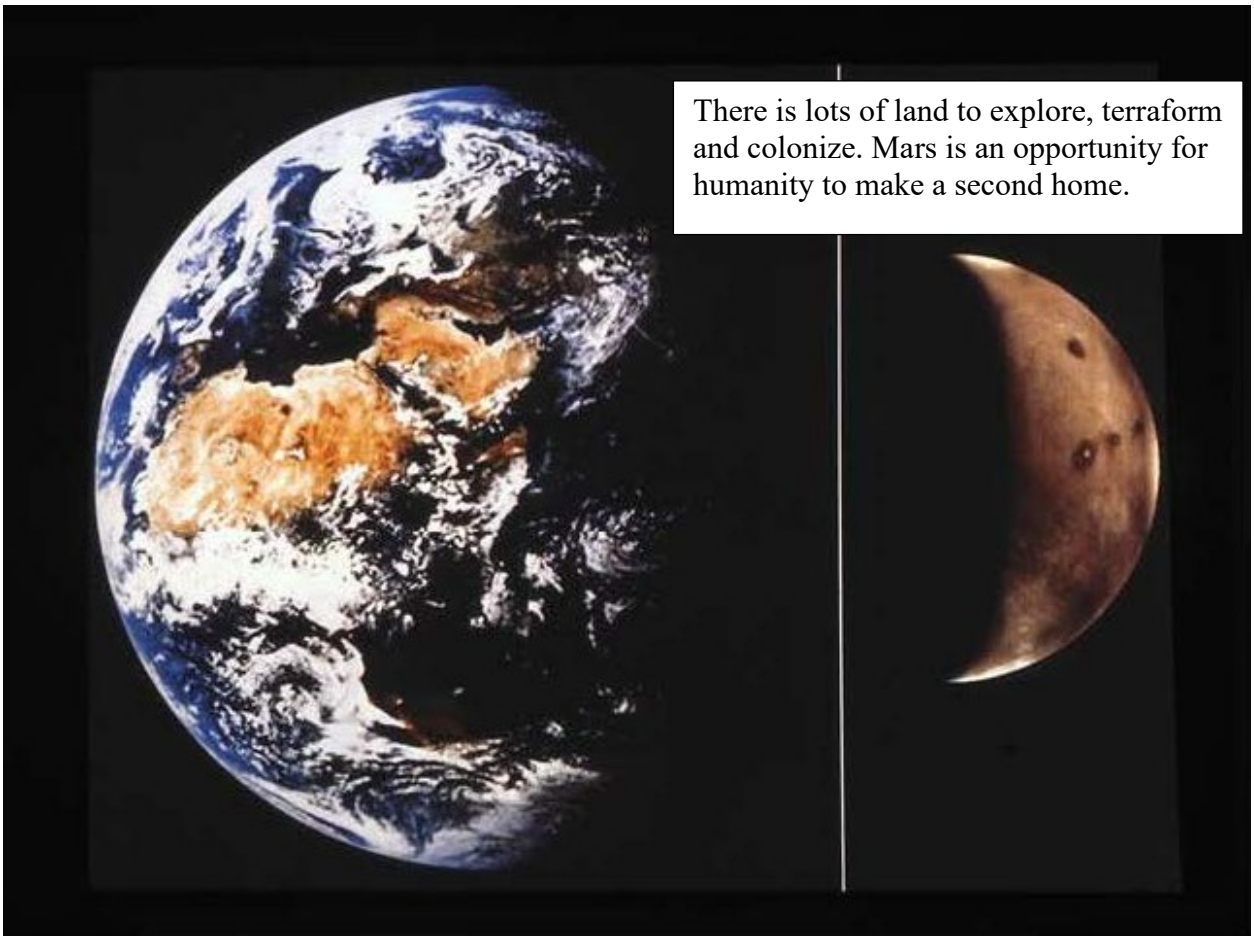
Humans must send more probes, more complex robots, conduct more scientific experiments and learn everything we can as fast as we can. The scientific data we gain from exploring Mars might save us. It is quite possible that at one time Mars had running water, oceans and even life. The death of Mars is a crime scene. We need to understand why Mars died. Will that happen to Earth? Are we next? If so, when? We have substantial scientific data about this dead planet. But we still do not know why Mars died or what killed it.

Traveling to Mars at the present time is best done by complex robots with artificial intelligence. American Airlines, Delta, United and Virgin Galactic will not be traveling to Olympus Mons anytime soon. We can catch a flight to any part of our planet and be there in 24 hours. But because of the gross mismanagement of our space program over the last 50 years, we did not fully explore this distant planet.

We must accept the reality that Mars is a dead planet. We cannot do something so simple on Mars as have a nice meal next to a beautiful ocean while we watch surfers and enjoy the sun over the water. There are no exotic animals to look at. We will not be swimming in a shark cage while the crew is filming with a GoPro and relatives are cheering hoping we make it back to the boat in one piece. Humans are curious and love adventure. Mars would clearly be quite the adventure. In time Mars will have visitors and plenty of them. The plans and the technology are moving in that direction.

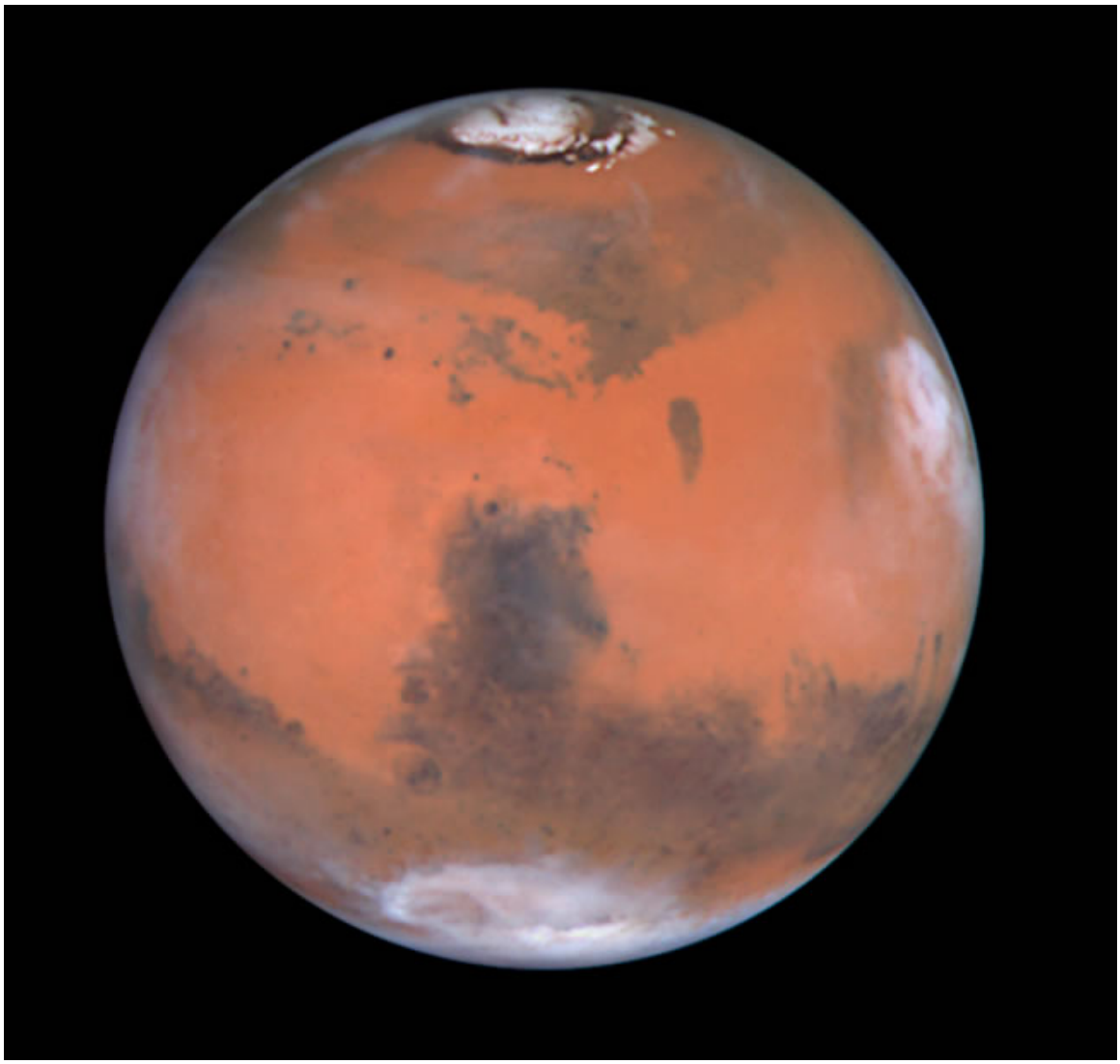
As propulsion costs decrease, space tourism will soon become a reality. One day, humans will be flying to Mars for the same reason people climb mountain peaks or swim with sharks. There is always the excitement of being the first to explore. The newness will probably not wear off for centuries. Mars has a big land footprint despite being much smaller than Earth. With no oceans, there is lots of land to explore. Does Mars have valuable minerals and metals? We don't know but we will find out.

It took several centuries to explore the land areas of our planet. If we work with other nations and put our tribal differences aside, we should be able to explore and start to terraform this dead planet in this century. Between Russia, China, Brazil, Japan and the European Union, and the United States, the resources are there to build a scientific pool that can create the necessary technology to properly explore Mars. Jointly working with other nations, the costs are affordable. The question today is not one of developing the technological capability. The real question is can we put aside tribal differences and survive as a species.



Earth-Mars Comparison This image compares Mars and Earth in their correct relative sizes. Mars (diameter 6790 kilometers) is only slightly more than half the size of Earth (diameter 12750 kilometers). Note the difference in color between the two planets. Almost 70% of Earth's surface is covered by liquid water. In contrast, Mars now has no liquid water on its surface and is covered with bare rock and dust. The four dark circles in the Mars image are the Tharsis shield volcanos. Africa is at the center of the Earth image.[8]

Mars is a long way from Earth. According to NASA, the average distance to Mars from Earth is 140 million miles (225 million kilometers). The distance to Mars from Earth changes because the planets orbit the sun at different speeds. Earth is closer and moves around the sun more quickly.[9]



Space Telescope View of Mars (0°N,270°W)

This image was obtained by the Hubble Space Telescope in 1995 as part of an observing program to monitor seasonal changes in the atmosphere and surface of Mars. The prominent dark feature in the center of the image is called Syrtis Major. The differences in color, which are exaggerated in this computer-enhanced image, are thought to be caused by differences in the deposits of dust and sand covering different regions. Features as small as 50 kilometers are seen in this image. The white region at the top of the image is the north polar cap. On the right, white clouds cover the Elysium volcanos.

-Hubble Space Telescope image STScI-PR95-17 10

ASTEROID BELT: Was there once a planet between Mars and Jupiter? Today there is a massive asteroid belt. At least 99 percent of the meteors that hit Earth come from the asteroid belt.[11] If the asteroid belt was once a planet, did they destroy themselves in a nuclear holocaust? The asteroid belt presents a very real danger to human existence. Our best science has concluded that an asteroid ended the Cretaceous reign of the

dinosaurs with a direct hit on Earth off the coast of Mexico.[12] The explosion was massive.

We can't seem to get over our ancient tribal differences, but like each other or not, asteroids are a clear and present danger to most complex life forms on Earth. We don't know when an asteroid might break free and is headed to Earth. If we want to survive as a species, all nations must work together to build a space defense. We must stop a stray asteroid with our name on it from hitting our planet. A similar event like that which took out the dinosaurs could happen again. It is only a matter of time before one of the millions of asteroids out there between Mars and Jupiter takes us out.

A global space-based military outpost might help prevent a disaster. These outposts need to be built as a joint human survival project. Unlike the planets in the inner solar system, the asteroids might have very valuable minerals. We can mine the asteroid belt and we should do this immediately. While there will be some value in space tourism, the real money will be in mining the asteroids. The best return on investment for up and coming space entrepreneurs is explore and mine the asteroid belt. We know from our very limited scientific analysis that the asteroids contain precious metals.[13] We need to explore and develop industries in space to process the metals from the asteroid belt. Some companies are already developing plans to mine the asteroid belt. If they succeed, it will revolutionize space exploration.

As for Planetary Resources, an innovative space exploration company has concluded that "a single 30-meter-long platinum-rich asteroid could contain $25 to $50 billion USD worth of platinum at today's prices. Our brief study of meteorites revealed they contain very useful metals."[14]

The majority of asteroids orbit in a belt between the planets Mars and Jupiter. These objects may be remnants from the early formation of the solar system. Much of the energy required to get anywhere in the solar system is used in just getting off the Earth. Reaching a near-Earth asteroid requires less total energy than landing on the moon. Traveling to the asteroid belt is easier than landing humans or robots on Mars.[15]

Was the asteroid belt once a planet that blew up in a nuclear or other type of explosion? We don't know. We need to find out. Nuclear proliferation threatens us all. Can humans blow up our planet? Yes, there is no upper limit to the explosive power of a hydrogen bomb other than the amount of materials to build them. It is well within the realm of scientific possibility that we humans could destroy the planet in an all-out nuclear war. To the best of our knowledge, there is no complex life of any kind on the asteroid belt.

Working with other nations to mine the asteroid belt is a far better use of resources than spending billions of dollars on more weapon systems. It's only a matter of time before we have a nuclear war. Unlike other tribal wars of the last few centuries where we were throwing sticks, stones and lead at each other, fission weapons are different. Fission and fusion weapons are instruments for committing genocide and

mass suicide. If the asteroid belt was once a planet and it blew up, we need to discover how, when and why.

THE GAS PLANETS:
The United States Voyager program launched two probes in 1977 that explored the outer gas planets. Now, over 40 years later, these probes have finally left our solar system.[16] No humans could have survived the incredible journeys made by Voyagers I and II and other scientific probes into the outer reaches of the solar system.

JUPITER- We have made very few explorations of the giant gas planets and for good reason. Jupiter is between 365 and 601 million miles away from Earth depending on where the planets are in their elliptical orbits.[17] We can barely send probes to this distant giant gassy planet. Sending humans anytime soon is out of the question.

This giant planet remains mysterious and for the most part, unexplored. Humans have managed ten probes to Jupiter, eight of which were flyby missions from tens of thousands of miles away.[18] What we learned from these few explorations is Jupiter is a fluid planet with no possibility in this era for humans to land there, much less even consider colonizing this immense gas ball. The giant gas planet is very windy.[18]

The moons of Jupiter continue to capture our imagination. Ganymede is the largest moon in the solar system. This moon is suspected to have an ocean under its layers of ice. We do not presently have the means to send humans there to explore. The best we can accomplish in the short run is send probes to gain more scientific knowledge.[20]

Summary of missions to the outer Solar System

System Spacecraft	Jupiter	Saturn	Uranus	Neptune	Pluto
Pioneer 10	**1973** flyby				
Pioneer 11	**1974** flyby	**1979** flyby			
Voyager 1	**1979** flyby	**1980** flyby			
Voyager 2	**1979** flyby	**1981** flyby	**1986** flyby	**1989** flyby	
Galileo	**1995**–**2003** orbiter; **1995**, **2003** atmos pheric				
Ulysses	**1992**, **2004** gravity assist				
Cassini–Huygens	**2000** gravity assist	**2004**–**2017** orbiter; **2005** Titan lander			

New Horizons	**2007** gravity assist				**2015** flyby
Juno	**2016**–**2021** orbiter				
Europa Clipper	**2026**– Planned orbiter				
Jupiter Icy Moons Explorer	**2029**– Planned orbiter				
Dragonfly		**2034** Planned Titan lander			

[21]

The other large moons of Jupiter, Io, Callisto and Europa have been the subject of much science fiction. We may dream of colonizing these distant moons, but it is pure fiction to think it will happen any time soon. If humans put our tribal differences aside and work together, we might could develop the necessary propulsion technologies before the end of this century. To the best of our knowledge, there is no complex life on Jupiter or any of its moons.

Even if we had the space propulsion technology to get to Jupiter in a short time frame, there is nothing of any substance humans could do on this planet. It is not like you would be taking a drive along an island highway and visiting a state park where you could see a blow hole from the ocean shooting up water between volcanic rocks. We do not know what the surface of Jupiter is like as no probe has ever survived making it that far into this gassy sphere. Our best bet with this planet is send more probes and gather more scientific data. Humans should never colonize Jupiter.

SATURN- Like Jupiter, this massive gaseous planet is a long way from Earth. Depending on where this planet is on it's the elliptical orbit, Saturn can be as close as 745 million miles to 1.04 billion at its furthest point.[22] Because this giant gas planet is so far from Earth, we have only managed fly by missions and observations from deep space.[23] We are intrigued by Saturn's beautiful rings and our present estimate of 60 moons. Colonizing this giant gas ball is just impossible with present human technology. Even landing robots on Saturn is a stretch of the imagination. We do not know how far we must descend into the gaseous planet before we can touch down on land.

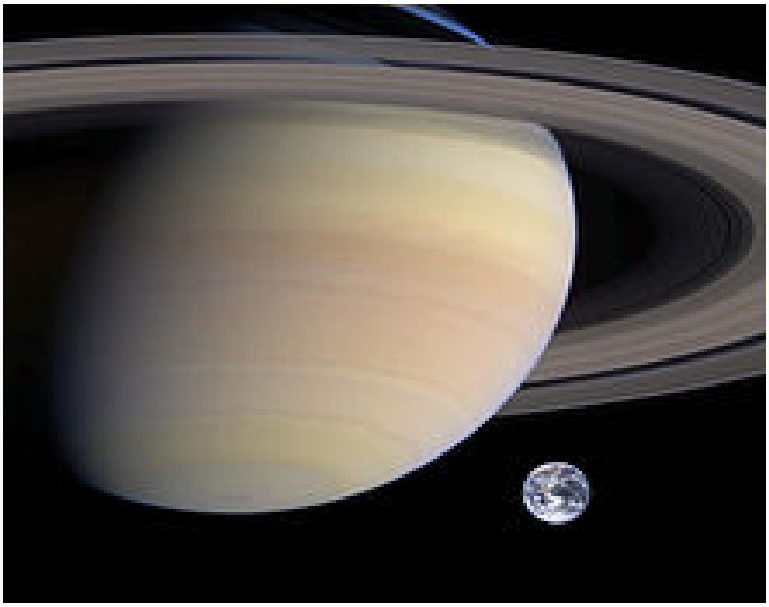
There is much science fiction about the colonization of Saturn's interesting moons. The European Space Agency landed a probe on Titian, Saturn's giant moon. This was the first time a probe was successfully landed on another moon in our solar system.[24] This is an impressive technological accomplishment. As propulsion systems improve, robots will eventually lead the way for human exploration to Titian.

Dr. Robert Zubrin, has studied this moon and determined, it is the most "Earth like" body in our solar system. It has the elements for human colonization.[25] That said, the colonization of Titian is not technologically possible at the present time. To the best

of our knowledge, there is no complex life on Saturn or any of its moons. More important, there is no compelling reason to send humans. Everything we need to study this planet can be accomplished from space and with AI robots. It is doubtful there will ever be any humans visiting this distant world other than from the safe distance of space. It is too far from Earth.

Jupiter and Saturn appear to be small stars that never ignited. We don't know what the effect of having three stars in our solar system would have been on the other planets. We do know that mining the rings of Saturn and the moons of these gas giants is technologically possible.

If we can locate our industries in outer space, the pollution created by industrial production will not contaminate our planet. We could bring the finished products back to Earth and leave manufacturing and the resulting pollution in the emptiness of dead planets and faraway moons. Industrial pollution is a disaster for the life forms on Earth. Industrial pollution in outer space on the asteroid belt or other moons and planets will cause no harm to any living being outside our planet for the simple reason, there is no life in outer space.



Composite image comparing the sizes of Saturn and Earth[26]

If production can be moved to outer space, the harmful pollution of manufacturing and agriculture cannot harm the oceans, forests and life on our planet. Can we mine the rings of Saturn? With robots and improved rocket propulsion, of course we can. These mining efforts will create entire new industries and give young people hope. They will have a productive profitable future. Humans should never colonize Saturn. Mining the moons of Saturn will be enough.

URANUS- is the second to last of the giant gas planet in our solar system. This planet is a long distance from Earth. We have just begun to explore Uranus. Our technology is so primitive and the distance so vast we have not conducted meaningful scientific studies of this planet. Uranus is between 1.6 billion and 1.98 billion miles from Earth.[26] With present technology, it takes between 7 and 9 years to get to Uranus.[28] No human has been in space for longer than one year at a time. We have no spacecraft that could take humans to Uranus and bring them back alive.

We know little about Uranus. It is so far from Earth we have just managed one fly by mission of the Voyager 2 in 1986 before it left the solar system.[29] The data from the Voyager 2 and our own observations from telescopes indicates it is a very cold planet with no internal heat from an iron core. We don't know for certain the composition of the moons or if this planet has any complex life. If Uranus and/or its moons have complex life, we could not detect it. No civilization there has tried to contact us.

Voyager 2 did manage to discover Uranus has at least 10 moons previously unknown here from Earth. Given the extreme distance from Earth, we cannot send humans to these moons. Sending probes is immensely difficult as 7 to 9 years is a long time for a machine to be in space without some mechanical problem.[30] Maybe later in this century our propulsion technologies will enable us to explore this icy giant. Our best scientific guess is there is no complex life of any kind on Uranus or its moons.[31]

Even if we had the technology and could travel to this cold distant world, it is not like we would have dinner as the sun is setting and enjoying a cool breeze of the warm ocean while sailboats are in the distance. We could not attend a nice symphony or a concert in the woods on Uranus. Drinking a bottle of fine Spanish red wine while eating grapes from Mexico, with French cheese and freshly made bread would be out of the question. We would have nothing to do other than try to stay alive. If something went wrong with our spaceship, we could not call AAA to come and tow us with our roadside travel insurance. There is not spaceside service for broken down spaceships. One accident and we are dead in space, not lost in space.

Everything would have to go right on this long dangerous journey. There could not be one miscalculation of any kind for humans to travel this far into deep space. But this is not how humans behave or how man made "things" that are mechanical function in the real world. The more complex a piece of machinery, the more moving parts, the greater the probability something will go wrong. Humans should never colonize Uranus.

NEPTUNE- is the last of the giant gas planets and the farthest from Earth. This planet is at least 2.8 billion miles from the sun.[32] We know little about this distant planet. Voyager 2 managed a flyby mission in 1989.[33] Voyager took 2 at least 12 years to do a flyby mission as it was leaving the solar system.[34] Our best scientific guess is there is no complex life of any kind on Neptune or any of its moons. No civilization from this planet has ever tried to contact us.

Like the other large planets, we know little about them. Studying these distant worlds and building industries around their exploration will create new technologies and meaningful work. We need to constantly develop new types of work in an everchanging world. Space is the last frontier. Exploring the solar system, terraforming the planets and moons, moving industry off the Earth and becoming an interplanetary species will save us from ourselves. New industries mean new opportunities for our expanding population and hope for our youth.

The Earth will remain the center of the universe. As spaceships come home from journeys to Mars, Titan, Europa and the asteroid belt, the crews will be welcomed by relatives and friends. Like successful explorers of yesterday, tomorrow's explorers will be heroes. If we don't blow ourselves up or destroy the planet's environment, humans will conquer the solar system. Earth will be the home planet, the center of our universe. Humans should never colonize Neptune.

THE OUTER SOLAR SYSTEM

THE KUIPER BELT- is shaped like a disk around the outer solar system. Beyond Neptune is a belt of icy objects with dwarf planets like Pluto. We believe that here is where some comets originate. Occasionally a comet will be visible here on Earth. We do not know if like the asteroid belt, the Kuiper Belt was once a planet that blew up. We don't know how many dwarf planets are in the Kuiper Belt or what they comprise. This is the edge of our solar system. Beyond the Kuiper Belt is the Oort Cloud and the beginning of intergalactic space.[35]

THE OORT CLOUD- This unknown belt of icy bodies, dwarf planets and moons reside within the shell-like structure of the Oort Cloud. We have no idea why the Kuiper Belt and Oort Cloud exist. We don't know how it was created, when or why. Was it once a massive planet that exploded? Is it a protective layer to deter other beings from entering our solar system? We need to explore and discover why there is a Kuiper Belt, what it is made out of and what function it serves.

These are the farthest known objects in our solar system. Located on the outskirts of the solar system, it is a "junkyard" of countless icy bodies left over from the solar system's formation. The Oort Cloud is a vast shell of billions of comets that wraps around the entire solar system like a protective bubble.

Based upon observations with our probes, our telescopes that the Oort Cloud is a giant spherical shell surrounding the entire solar system.[36] We believe it contains billions or even trillions of icy objects that wraps around the entire solar system. Why it exists and what it is made of is not known. We have not explored this far from home.[36] Is the Oort Cloud a protective barrier surrounding the entire solar system? There are so many questions to answer regarding this shell out in deep space.

Humans should never colonize the Kuiper Belt or Oort Cloud. These distant places are just too far. We can and should send intelligent robots and work with other nations to accomplish these scientific goals. What we can do is vastly improve propulsion systems and make spacecraft more maneuverable. We can no longer do this alone. The virus has completely bankrupted the global economy. Any human attempts at space exploration going forward in this century will have to be made in cooperation with other nations. We need to view this pandemic as an opportunity to work together.

Over 50 years since Neil Armstrong landed on the moon, very little progress was made with human space exploration. Instead of going on to explore Mars, the Nixon administration killed human space exploration. In many respects the Space Shuttle did

space exploration a big disservice. We circled the Earth over and over again. No more attempts were made to send humans back to the moon.

Global cooperation is going to be required if this species is going to survive. We are fighting with the natural world for space. As we destroy more and more of the rainforest for something so incredibly stupid as secondhand production of beef, more animal species will be threatened and many will be lost. Our Earth Mother will just send more viruses to protect her other children.

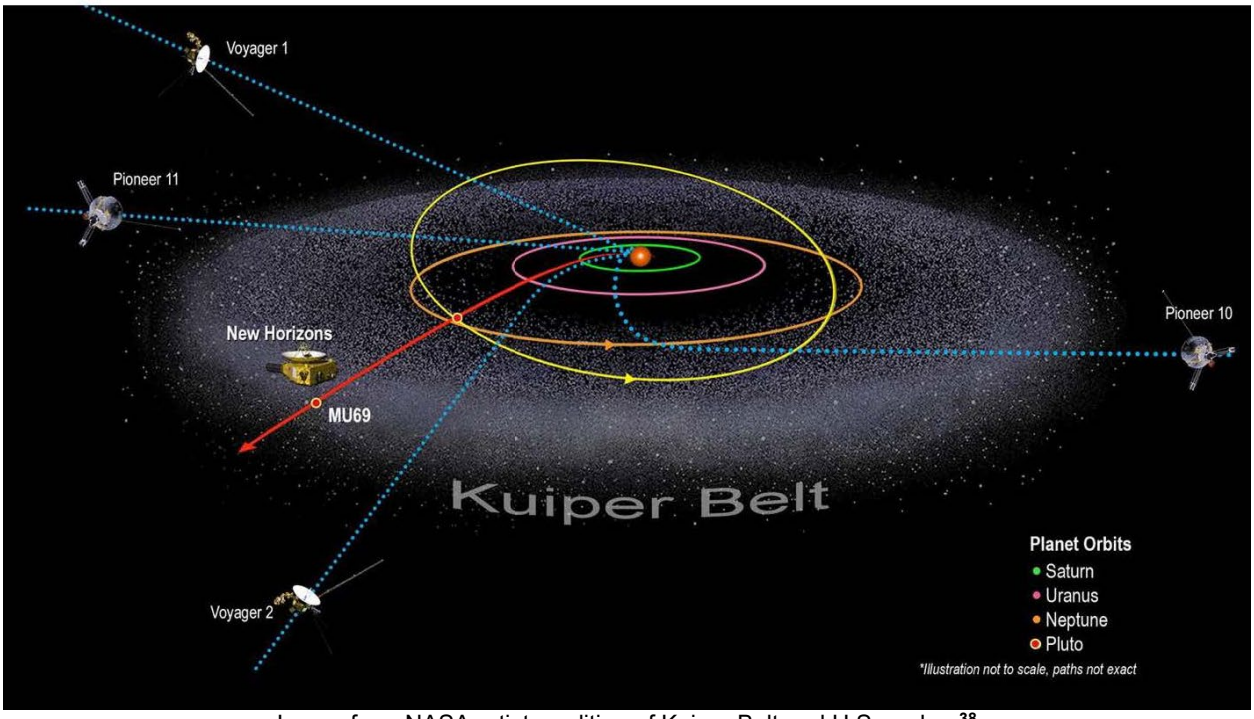
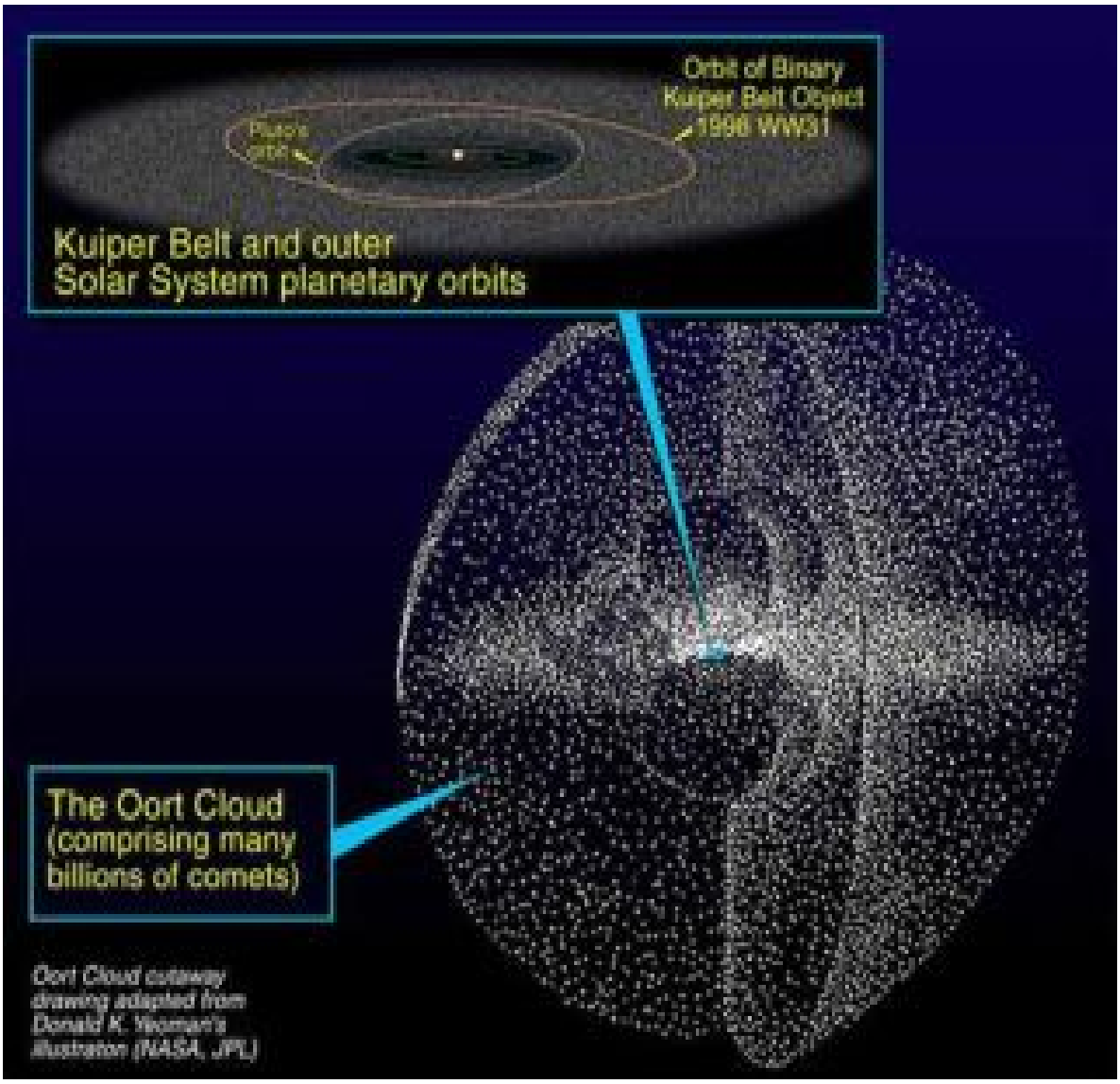


Image from NASA artist rendition of Kuiper Belt and U.S. probes[38]

We truly are alone in this solar system. We need to chart a new path for young people in this century. The path that will work and give young people hope is global cooperation in space and ocean exploration, medical breakthroughs, law, food production and finance. We humans and our plant and animal brothers and sisters are alone in this solar system. Now that we understand this, we need to move past the tribalism and nationalism of our brief history and get busy cleaning up the massive damage done by industrialization over the last 150 years.



Artist rendering of the Kuiper Belt and Oort Cloud.[39]

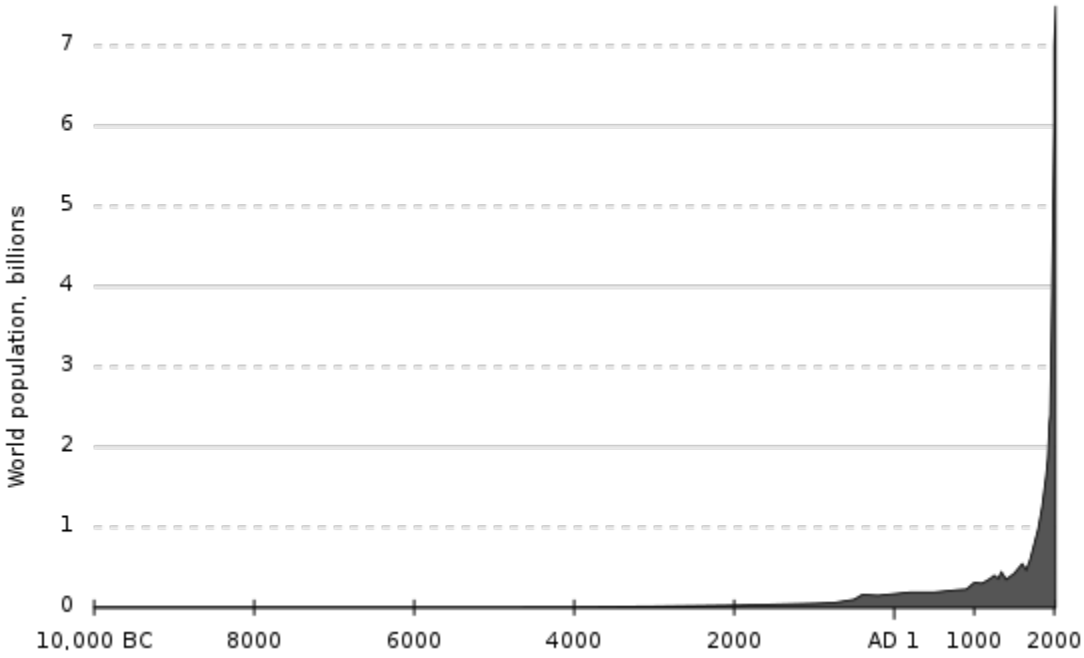
Chapter Six

Human Technology is in its Infancy

There is so much about the universe we just do not know. That is to be expected. We have had only electricity for our cities on a consumer scale since the 1930s.[1] This is less than 100 years since we have had lights in our homes and cities. Some of us can remember when homes did not have indoor plumbing. Those of us who grew up on farms without indoor plumbing remember having to take baths in aluminum tubs with the water heated on wooden stoves. Yet even this primitive technology exists nowhere in our solar system except here on our planet, the Earth.

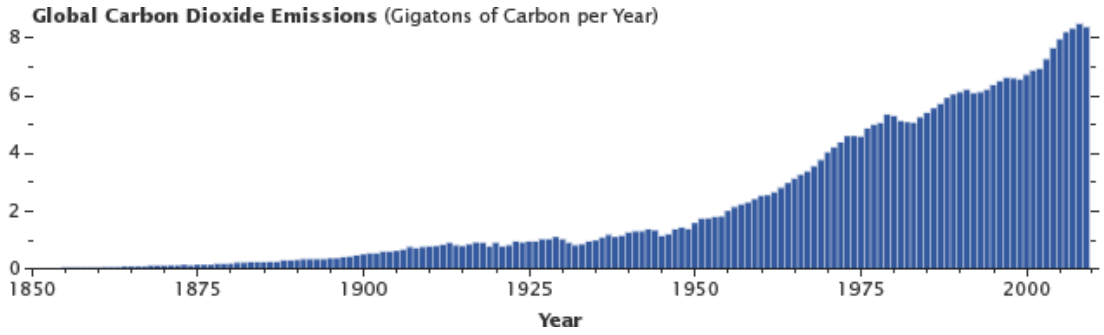
Home appliances were once a big luxury. The few stations on the radio may have been the main source of entertainment. In the 1930s there was no television or internet and humanity was living on the edge of a world war. Our grandparents and great grandparents lived in a world without electricity and indoor plumbing.

Our human population while growing, was manageable. Today, the human population bomb has exploded. While our planet is crowded, the planets and moons of our solar system remain devoid of all life. As we continue to explore these heavenly bodies, we will populate them with plants and animals and become a multi-planetary species. The population of the planet has more than quadrupled since 1800.[2] We will need new homes for humans, plants and animals. This one is bursting at the seams with people.



Graph of human population from 10000 BCE to 2000 CE. It shows exponential rise in world population that has taken place since the end of the seventeenth century. We are adding approximately one million people to the planet every four days.[3]

We have only been mass producing automobiles since 1913 with the Ford Motor Corporation leading the way to this new transportation age.[4] Automobile mass production, the extensive use of fossil fuels and population growth has resulted in the increase of CO^2 from the production of coal for electricity.[5] Human caused greenhouse gases from fossil fuel use is obviously causing environmental problems. Other planets do not have these environmental problems because they have no complex life that can be damaged by pollution.



Passenger jets have only been around for approximately 60 years with the mass production of the Boeing 707.[6] Prior to the virus we had over 80,000 flights per day.[7] But despite the incredible ability to fly anywhere on our small planet, humans cannot routinely travel to the moon, Mars or any planet in our solar system. We can get to Europe in less than 24 hours. Unlike the early explorers during Copernicus' day almost 500 years ago, the entire planet is within our reach. We can visit the temples of Thailand, the jungles of Costa Rica, the cathedrals of Europe or national parks in the United States, all within 24 hours. Space tourism will soon become a reality and available to adventurous curious tourists.

Indoor plumbing is still not available in every part of the world.[8] We do not have clean water systems in many parts of the world. Flush toilets are a first world luxury. But, coupled with global population growth, we are facing disaster.

Overpopulation coupled with urbanization is creating the seeds for an economic and environmental perfect storm of biblical proportions.[9] Other planets and moons don't have plumbing problems because there is no complex life of any kind in our solar system. As we continue to explore the inner solar system, in time we will populate these worlds.

While the internet is a fact of life in rich countries, its reach is not yet global. Over four billion of the 7.8 billion humans still do not have access to the internet.[10] To properly educate the global public, everyone has to have access to the internet. Our small planet is not well governed. Leaders do not try to educate everyone. Access to the internet and

education will protect all life here on Earth. Only by educating people about the heavens will humanity appreciate the uniqueness of life here on Earth. The more that young people learn about the solar system, the greater chance they will take better care of life here at the center of our universe.

Despite some progress, at least 80 percent of the ocean floor remains unexplored.[11] In Copernicus' day, the oceans and the continents were full of wildlife. Today, the fisheries are on the edge of collapse, half of the wildlife in the oceans is gone and we are killing over 200,000 sharks each day for shark fin soup.[12] As we explore the solar system, hopefully one day we can get water flowing on Mars and bring life back to this lifeless planet. We can melt the ice caps and create an atmosphere and make Mars livable by terraforming it. Life from Earth can be spread to another world.

Rocket propulsion for space exploration still depends on chemical propulsion to leave the Earth's gravity well. This continues to be extremely dangerous.[13] Rockets blow up as these are controlled explosions and accidents can and do happen.[14] When the explorers left Europe and China in the 1500s they did not have to worry about their ships blowing up at the port. These ships were slow and relied on the wind to get to their destinations. Now, almost 500 years later we fly on jets to every major city on the planet. But humanity remains stranded on Earth.

The scenes from Star Wars with the Millennium Falcon out running the Empire's battle cruisers by jumping into hyperspace and traveling at near light speed remains science fiction. The spacecraft we have today are similar to Columbus' three tiny ships that sailed from Spain in 1492. They depend on gravity to assist them in getting to other parts of the solar system. Our ancestors relied on the wind to get us to other sides of this small planet. Those ships were at least maneuverable. Today's spaceships can't turn with the directions of the winds, change courses or even stop when there is an emergency.

Space exploration is dangerous and will be for the foreseeable future. Until we can cross the distances of space and time to visit other planets, the Earth will remain the most important place in our universe. We can do this by harnessing the power of the atom for space travel.

Despite not knowing how many life forms exist on our home planet, we are making many species go extinct at the fastest rate in the entire history of our small planet. We in the West and in Asia do not respect other life forms for a variety of reasons.

The human view that only we matter is deeply rooted in religion. This religious paradigm is dangerous. We need to return to the Ptolemaic geocentric model if we are to survive. We must educate the public that the existence of life on Earth is what makes us the "center of the universe". Once we change our cosmic paradigm from one planet among billions of planets to all life on Earth is importance, we might survive.

With education, we can change our thinking. Under Western Christian thought, humans are at the peak of God's creation. The Earth is viewed as a resource to be exploited and utilized to man's sole advantage. In The Historical Roots of Our Ecological Crisis, Lynn White, Jr. observes that:

> "I personally doubt that disastrous ecologic backlash can be avoided simply by applying to our problems more science and more technology. Our science and technology have grown out of Christian attitudes toward man's relation to nature which are almost universally held not only by Christians and neo-Christians but also by those who fondly regard themselves as post-Christians. Despite Copernicus, all the cosmos rotates around our little globe. Despite Darwin, we are not, in our hearts, part of the natural process. We are superior to nature, contemptuous of it, willing to use it for our slightest whim."[15]

LIFE IN THE UNIVERSE

The highest probability is there is life on other star systems. Drake's equation as explained by Carl Sagan is not just astronomy. It also addresses geology, biology, chemistry and other diverse factors.[16] It is almost mathematically impossible for there not to be life in the universe. Clearly there is life here in our Earth, our universe. The patterns are similar throughout all of creation.

A careful look at other star systems has revealed repeatedly, virtually all heavenly bodies are shaped as spheres. Other planets have the same laws of gravity that are here in our star system. There are billions of stars just in our galaxy. These stars are sphere shaped and have planets circling them. The same pattern was used repeatedly in creating these worlds. The same elements exist in outer space as do here on Earth. Their combinations are similar to what exists here. We can measure the light from other stars and make certain assumptions about the composition of these unreachable worlds. Life in the universe is a probability, not a possibility.

To get to Earth from another star system, an alien intruder needs to pass through the first defense shield —- the Oort Cloud. We do not know why this shell around the entire solar system exists. We do not know what is in the Oort Cloud, but we do know it has billions of icy objects, and comets.

If an alien intruder gets by the Oort Cloud, it must successfully navigate through the Kuiper Belt. This asteroid like belt is full of dwarf planets, more icy objects and Lord only knows what.

After aliens get by the Kuiper Belt and gets past the gravity of the large planets, they will still have to maneuver past the asteroid belt between Mars and Jupiter. This massive asteroid belt is full of dangerous debris that can tear a spaceship apart.

Finally, this alien craft must be able to enter our atmosphere without burning up. Why are there these protective layers shielding our small planet and the precious animals and plants which exist only here? It must be because the Creator of the universe has made life on our small planet special and unique. We are here with billions of other living plants and animals. We need to appreciate our uniqueness.

Copernicus and the great minds who followed him changed our cosmic paradigm that had the Earth as the center of the universe. It is time to change it back. A child born today will be age 80 at the turn of this century. These children should have a home that is full of life and a planet that has clean water, healthy rain forests, oceans full of wildlife and fisheries that are intact. That can only happen by recognizing the uniqueness and importance of life here on our tiny planet. It is because the Earth is the center of our universe and all life is important, not just humans.

Just because we can kill other creatures and destroy the rain forests does not make it right. We humans should be the stewards of the Earth, not the destroyers of creation. Since these other distant worlds are out of our technological reach, we have to vigorously pursue space exploration so we can preserve life here on Earth.

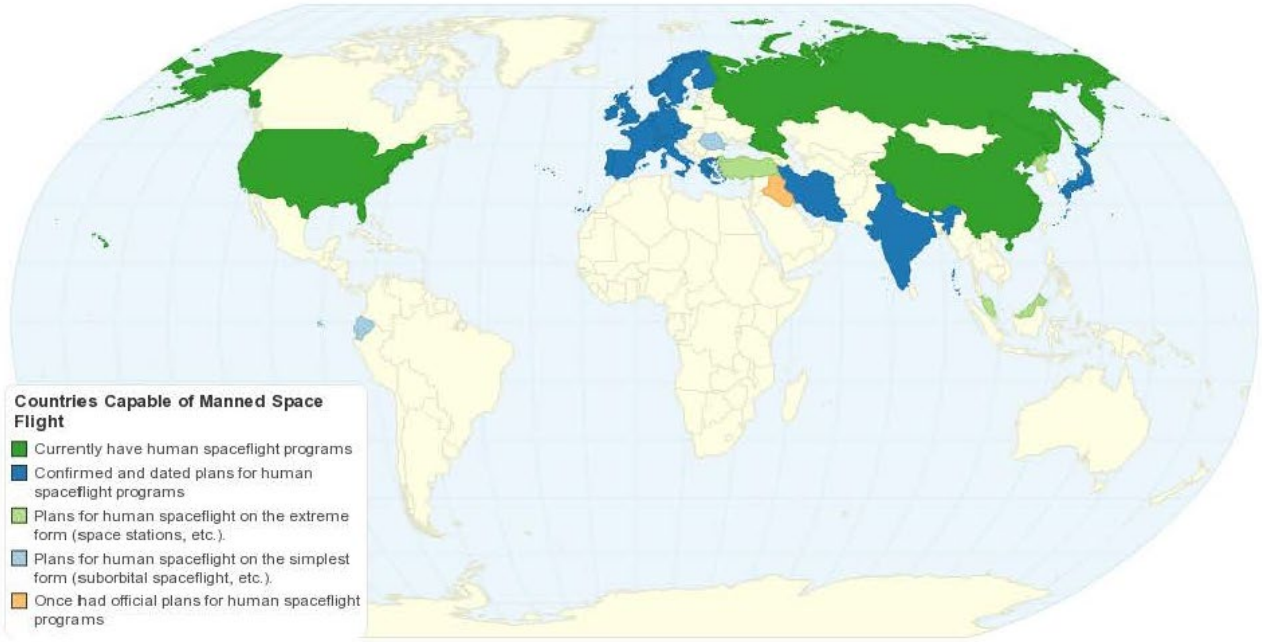
Our fate is tied to that of the other life forms that share the Earth, the center of our universe. As stated in Ecclesiastes 3:19-21:

> “Man's fate is like that of the animals; the same fate awaits them both: As one dies, so dies the other. All have the same breath; man has no advantage over the animal. Everything is meaningless. All go to the same place; all come from dust and to dust all return. Who knows if the spirit of man rises upward and if the spirit of the animal goes down into the earth?”[17]

We need to get people to look up at the sky so they can appreciate this precious Earth, the center of our universe, is the only universe that matters. By exploring the solar system, we and the other creatures who inhabit spaceship Earth, might survive.

Sources: Authors note, the research for these chapters provides nothing new. We have the data from many sources on space exploration and life on Earth. That is not the purpose of this book. The purpose is to change the cosmic paradigm to the Earth being the center of the universe because we have life here and nowhere else in our solar system. Life here is what matters.

Countries Capable of Manned Space Flight



PART II

JOURNEY THOUGH THE WAR FACTORY

Chapter Seven

Journey Through the War Factory

"You shall not be like the hypocrites. For they love to pray standing in the synagogues and on the corners of the streets." — Matthew 6:5

Why should we redirect taxpayer money from defense to space and ocean exploration? Why explore the cosmos and the oceans? The answer is found in human history. When humans came out of Africa we explored, competed for empire and colonized. We conquered the land areas of our planet. That we still have militaries indicates our prior conquests. The United States has 1.4 million men and women under arms.[1] While the number seems large, we have to remember there are over 320 million people living in the lower 48 states. Globally, there are approximately 40 million people under arms[2]. With a human population of approximately 7.8 billion, that is not a large number.

In the United States, our military is in the shadows, on bases at home and overseas. Our military is not hostile to the public. We know these troops. They are family members and friends. Some of us work at defense installations or for the defense contractors.

The current economic model of consumer spending is supported by the world's largest defense budget. This model can and must change for obvious reasons. The United States is the greatest military power in human history. Our country has ten aircraft carrier battle groups and 5,000 military installations in 90 countries.[3] With less than 5 percent of the planet's population, we consume approximately 20 percent of the world's oil; produce over 40 percent of the carbon dioxide that affects climate change and create more municipal solid waste garbage per capita than any other nation.[4]

We created this consumption economy with empire. After World War II ended, the United States stepped into the shoes of the collapsed British Empire and inherited an imperial role in world affairs. Americans preached democracy at home yet supported brutal dictators and strong men around the planet. This was a disaster for millions of people and for global economic development.

The model created was a massive military-industrial complex, a popular term coined by President Dwight D. Eisenhower in his now-famous farewell address. It should more appropriately be called the military-industrial-labor unions-universities coalition — in short, the defense spending coalition. This growth in defense spending has occurred for the same reasons any other quest for more money and power takes place in society. It is the normal push of bureaucratic inertia and the natural growth of organizations. Whether it is the Drug Enforcement Agency, Health and Human Services, the Social Security Administration or any other government agency or corporate organization, growth is a natural process. With this growth comes power from the broad-based number of individuals that have a vested interested in money being

spent on this sector. Bureaucratic growth is a natural phenomenon that results in political spending cycles that feed on themselves.

With political roots that trace to the Civil War and military installations or industries in every congressional district, the military-industrial complex is the embodiment of political power in America. A journey through the American war factory illustrates the reach and strength of the defense spending coalition. Only by understanding the depth and scale of the defense spending coalition and vast infrastructure can we come up with an alternative.

We cannot just “cut defense spending.” Without an economic alternative, the result would be unemployment in the communities where defense spending provides a

livelihood. It does not matter where you live in America, within one hour from your home in every major city of every state there is a defense contractor or a military base. This need for employment created the National Security State permanent war so the post-World War II economy would not collapse like it did during the Great Depression. Hitler and Tojo lifted the U.S. economy out of the Great Depression.

Defense spending took off because policy planners feared another economic collapse; the arms race became economic policy. Planners mistakenly believed war was good for the economy. Defense spending is economic policy, albeit a poor alternative to more productive expenditures.

After World War II, numerous rural agricultural communities lost their young to the jobs, excitement and entertainment possibilities of urban America. They had to find work somewhere and the defense industries provided employment. As a result, thousands of communities nationwide depend on defense spending to provide jobs.

Since all 435 congressional districts have a defense contractor and/or a military installation, there is little incentive to oppose self-serving spending that will create very few jobs. With over 5,000 bases of all types in the United States as of 2020, every area of the country is affected by the defense budget. Increasing defense spending is popular with Congress.[5]

Both political parties voted for the Iraq war. The United States, in violation of international law, invaded Iraq, a country that had nothing to do with 9/11. This was an historic event that brought about the beginning of the end of Pax Americana.

Conflicts in this century will be battles over ideas and economics. Military conflicts between nation-states with huge land armies like those of the last century's two world wars are obsolete. The United States cannot attack Brazil, China, Russia or any large country in a ground war. But once the pandemic ends, nations can engage in major trade, sporting events, international art exhibits and together explore the inner solar system.

The Iraq war changed human history. Now the United States is one nation on a planet with many nations. We are not "special" or "a shining city on a hill" or "the greatest nation on Earth." Other citizens love their countries, too. Yet despite our flaws, the world is a better place because of the United States' military. Working with other nations, all human-created global problems can be solved. We can have the collective security envisioned by the founders of the United Nations. This can only happen with a new economic model not based upon defense spending and consumerism. As Admiral Eugene Carroll observed:

> "For 45 years of the Cold War we were in an arms race with the Soviet Union. Now it appears we're in an arms race with ourselves." *Admiral Eugene Carroll, Jr., U.S. Navy (Ret.) Deputy Director Center for Defense Information*[6]

Chapter Eight

Don’t Blame the Military for the Military-Industrial Complex

“Worse than traitors in arms are the men who pretend loyalty to the flag, feast and fatten on the misfortunes of the nation while patriotic blood is crimsoning the plains of the south and their countrymen are moldering in the dust."

— Abraham Lincoln

The excesses in defense spending and consumerism cannot be blamed on our men and women in uniform who try so hard to guard our freedoms and protect our liberties. We are in a century with unusual enemies and a different mission for our armed forces. We no longer face totalitarian empires like the former Soviet Union or Nazi Germany.

Warfare today is asymmetrical. Lone wolves and small criminal organizations using the pretext of religion are the danger to global peace. Whether it is the international narcotics trade or religious terrorism, large armies are not what the world is fighting. We have an international crime problem, not a conflict with fascism or communism. We are fighting suicide bombers and international drug dealers, not well-armed soldiers with uniforms, planes, tanks and heavy battleships. Intelligence and detective work, not aircraft carrier battle groups, will win the day.

Large nation states, like India, China, Pakistan and Brazil have their hands full just managing their large populations. These countries have major economic ties to the West. The Chinese are interested in developing their economy and internal stability, not in ruling the world. With a population of over 1.4 billion, the Chinese government has massive internal political, economic and environmental problems.[1]

In the last century, our politicians often used our military as the enforcer for big business. As Major General Smedley Butler, U.S. Marine Corps., observed in 1933:

> “War is just a racket. A racket is best described, I believe, as something that is not what it seems to the majority of people. Only a small inside group knows what it is about. It is conducted for the benefit of the very few at the expense of the masses.
>
> I believe in adequate defense at the coastline and nothing else. If a nation comes over here to fight, then we'll fight. The trouble with America is that when the dollar earns only 6 percent over here, then it gets restless and goes overseas to get 100 percent. Then the flag follows the dollar and the soldiers follow the flag.
>
> I wouldn't go to war again as I have done to protect some lousy investment of the bankers. There are only two things we should fight for. One is the defense of our homes and the other is the Bill of Rights. War for any other reason is simply a racket.

> There isn't a trick in the racketeering bag that the military gang is blind to. It has its "finger men" to point out enemies, its "muscle men" to destroy enemies, its "brain men" to plan war preparations, and a "Big Boss," Super-Nationalistic-Capitalism. Looking back on it, I feel I could have given Al Capone a few hints. The best he could do was to operate his racket in three districts. I operated on three continents." [2]

In a world where major multinational corporations transcend the legal reach of any nation state, the American military machine no longer has the role of protecting the free world from the dangers of global communism. Far greater dangers come from international viruses like AIDS, Ebola, Covid-19 and from economic dislocation from globalization. Both will not be eradicated or controlled any time soon.

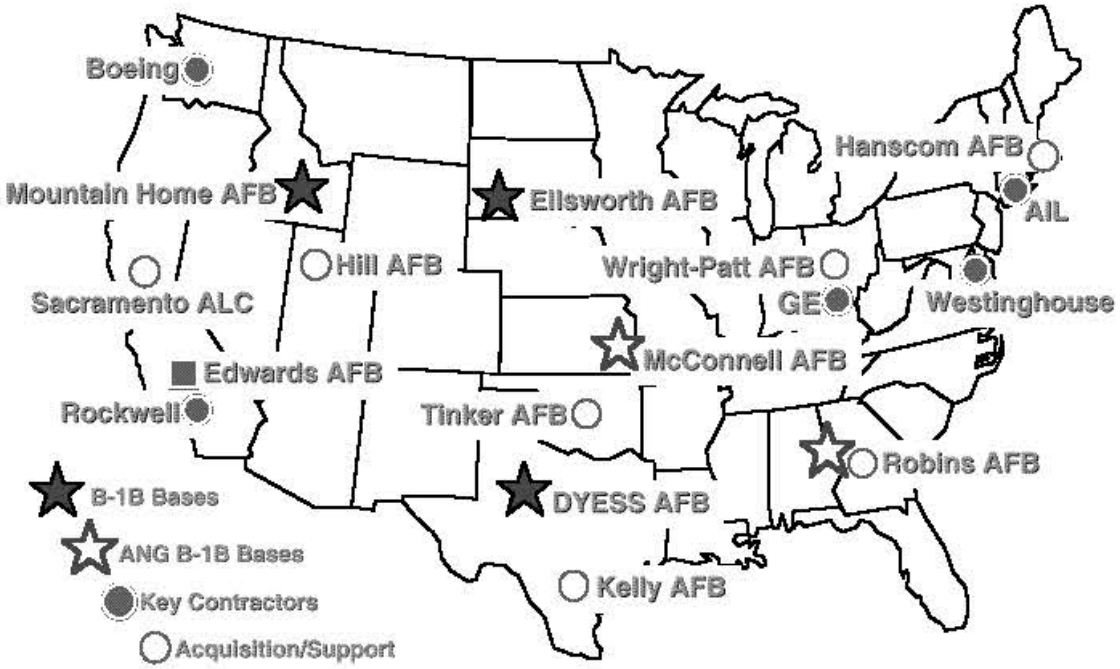
The military does not set public policy. They are asked to do the unpleasant task of carrying out political objectives, regardless of how ill-advised. If that means the angry jungles of Vietnam or the hot deserts of Iraq or the mountains of Afghanistan, then our military is there and ready. It also means the troops are stuck with weapon systems they don't want, programs they don't need and military hardware that is not appropriate for today's challenges. The history of weapons procurement in Washington is one of intrigue, duplicity and pork barrel politics. [3]

If a credible threat does not exist, then lie to justify the spending. In the words of the infamous Hermann Goring (1945): "The people can always be brought to the bidding of the leaders. All you have to do is tell them they are being attacked and then denounce the peacemakers for lack of patriotism." [4]

Politics was the decisive factor in going forward with major defense programs, from the B-70 bomber to the B-1, the B-2, various nuclear submarines, the Nimitz aircraft carriers, the MX weapons system, the Osprey helicopter to the missile defense system and the F-22 fighter and F-35 fighter program.. [5]

With subcontractors in numerous congressional districts, these weapon programs have popular appeal. The funding by Congress of the weapon systems meant major financial gain as each system costs millions of dollars per product. The B-1 cost over $200 million per plane without armaments or support bases.[6] These planes provided handsome profits for Rockwell International, the builder, and General Electric, one of the world's largest corporations, which provided the engines.[7]

Northrop Grumman did well as the prime contractor of this expensive plane. The subcontractors were spread out throughout the nation to force the program down the public's and the military's throat. These bombers succeeded politically and technologically. The B-2 bomber was a political pork barrel project, not a military necessity. In the end, the bomber was found not to be as effective as far less expensive alternatives.[7] The same process is used in the political funding for all weapons systems. Can you get part of it in your district, not does the military want or need it. This is very wasteful and corrupt.



These impressive weapons systems are the wrong solution for the challenges of this century. Major weapons systems were necessary for the last century when America was fighting the Nazis, Japanese imperialism in Asia and competing with the Soviet Union. They do not work against religious extremists determined to kill others even if they have to kill themselves. Today's suicide bombers, international drug dealers and lone wolf killers cannot be stopped by nuclear submarines, expensive fighter planes or aircraft carrier battle groups. Viruses are even more dangerous.

A $12 billion aircraft carrier will do wonders for the defense contractors who build this massive weapons system. It will not make the nation or the world safer from criminals or viruses. Much of the defense budget has more to do with the projection of American power and protection of American interests. The military is left out of the policy equation and is too often saddled with weapons systems and bases that are unnecessary for the mission at hand. Politics, not military necessity, will continue to fuel defense spending.

Congress will refuse to close military bases in politically powerful districts despite the Pentagon wanting to shut them down. Congress will allocate more fighter planes

then the Air Force needs. Congress, not the military and not the Executive branch, has control of the purse strings. This political reality existed before September 11, 2001 and continues today.

But simple things like suggesting an increase in military pay create a firestorm of controversy. There are lobbyists for fighter planes, ships and artillery pieces. But paying a competitive salary to our soldiers to stay in the military is not always a high priority with Congress. Like schoolteachers, we expect a lot from them but are unwilling to properly pay for their services. The people who protect this country will give their lives to insure we have a Bill of Rights and that our homes and streets are safe. They do not keep the profits that come from major weapons systems and they do not get votes for their re-election.

Despite the criticism of these expensive weapon systems being inappropriate in the days of suicide bombers, snipers and viruses, the defense industry pushes forward. With allies in Congress they continue to make a mockery of the defense needs of this country and the free world. Our young men and women in the military love our country and do wonderful work all over the world.

Our military is a global force for good, from providing aid to the victims of the devastating tsunami that killed hundreds of thousands of people in Thailand and Indonesia to protecting school children in Iraq. Our men and women who serve this nation should be paid and paid well. Our defense contractors are well paid. Let’s pay the people actually protecting us more money. They are worth it.

Chapter Nine

A New Role for the World's Militaries

"The Indians are so naïve and free with their possessions that no one who has not witnessed them would believe it. When you ask them for something they have, they never say no. To the contrary, they offer to share with anyone. They would make fine servants. With fifty men we could subjugate them all and make them do whatever we want."

— Christopher Columbus

One of the most amazing advances in human history has been our increasing knowledge of the vastness of the universe. In the short span of 500 years, the travel time on our planet has greatly diminished. Prior to the virus, flights to the other side of the world were routine. In the mere span of 18 hours, humans could fly from Salt Lake City, Utah, U.S.A., to Sydney, Australia. Most of the world's major cities were connected by 22 hours of flight time. Our small planet is interconnected by the Internet, jet travel, international trade, telecommunications satellites and common laws that govern us all who are civilized. The International Standards Organization sets over 20,000 standards for manufacturing on many industries. This furthers international trade.[1] There are numerous international conventions on the environment, trade and crime. Law exists.

Our ancestors had a much larger planet. You usually only went on the 1,600-mile Camino Real de Tierra Adentro from Mexico City to Santa Fe one time. The trip was six months long and dangerous.[2] Travel was on horseback or foot with numerous stops. If you survived on the 2,000-mile Oregon Trail and made it to the rich lands of the northwest you did not go back. The trek would take four to five months.[3] Besides being subjected to the elements, the Indian tribes who were fighting to preserve their way of life might attack you. Accidents were common. Crime was another danger. A wrong turn might mean death from starvation or thirst. The journey was not for the faint of heart.

Today, the drive from Salt Lake City, Utah, to Portland, Oregon, is 13 hours driving in air-conditioned vehicles complete with music and comfortable seats on well-maintained roads. There are numerous rest stops, nice hotels, restaurants and sightseeing along the way. If you fly, the trip is about two hours. National and global tourism, in the pre-virus world were huge multi-billion-dollar industries. This was possible because the planet's militaries kept the peace.

The criminals of our small planet do not feel bound by the rule of law and will rob travelers, blow up restaurants and schools, kidnap, rob, steal, sell dangerous illegal drugs and do what ill-mannered scum throughout history have done: crime. That humans could travel from the United States to places our ancestors would only dream about was itself a remarkable testimony of how much progress we made in a mere 500 years. Law, technology and the world's militaries enabled humans to visit Beijing, Moscow, Bali, Paris, Puerto Vallarta, Vancouver British Columbia, Machu Picchu, the wildlife safaris of Kenya, islands in the Caribbean or just the beautiful national parks

here in the United States. The world's militaries worked as global police forces to keep the peace, protect trade and travelers and enforce international laws.

Because of our advancement in space research and exploration, we now know other dangers. Asteroids could take out the entire planet and there is the probability of alien civilizations in other parts of our huge galaxy. In this century, the global militaries will have to engage in mankind's most important missions. Besides protecting the planet from criminals, in this century global militaries need to protect the planet from asteroids and develop super weapons. We will have to work together to fight pandemics.

Scientists are contacting the universe, trying to contact other life forms. This is a big mistake. We should continue to discover what is out there. But contacting civilizations far more advanced than humans still fighting over pieces of land based upon religious books written thousands of years ago is not prudent. WHEN we encounter other life forms, they will be hostile, far more advanced and extremely dangerous. The physicist Stephen Hawkins holds the chair at Oxford once held by Sir Isaac Newton. He had this to say about alien life forms:

"To my mathematical brain, the numbers alone make thinking about aliens perfectly rational," he said, according to The Sunday Times. "The real challenge is working out what aliens might actually be like."

Hawking says that they could be microbes – basic animals such as worms which have been on Earth for millions of years but suggests that extraterrestrial life could develop much further. "We only have to look at ourselves to see how intelligent life might develop into something we wouldn't want to meet," Hawking said. "I imagine they might exist in massive ships, having used up all the resources from their home planet. Such advanced aliens would perhaps become nomads, looking to conquer and colonize whatever planets they can reach."

The scientist, who was paralyzed by motor neuron disease, warned that contact with alien life could spell disaster for humans. "If aliens ever visit us, I think the outcome would be much as when Christopher Columbus first landed in America, which didn't turn out very well for the American Indians." [3]

The worlds' scientists need to work together on space-based weapons for the not-so-distant threats of asteroids hitting the planet and on creating vaccines against dangerous viruses. We don't know how much time we have before we encounter other alien civilizations. Time goes by fast. The dangers we face might be decades away or just a few years. Our efforts to contact other civilizations might have succeeded. Humans must work together to face common threats.

Asteroids have been slamming into the earth since the planet was formed. The most common theory on the extinction of the dinosaurs is an asteroid hit the earth. The impact was so great the dust and debris blocked out the sun, altered the weather and known life on the planet ended. Humans await the same fate. But unlike the dinosaurs,

we have opposable thumbs and technology. Some scientists speculate would happen if a giant asteroid hit the earth:

> By the time you get up to a mile-wide asteroid, you are working in the 1 million megaton range. This asteroid has the energy that's 10 million times greater than the bomb that fell on Hiroshima. It's able to flatten everything for 100 to 200 miles out from ground zero. In other words, if a mile-wide asteroid were to directly hit New York City, the force of the impact probably would completely flatten every single thing from Washington D.C. to Boston, and would cause extensive damage perhaps 1,000 miles out — that's as far away as Chicago. The amount of dust and debris thrown up into the atmosphere would block out the sun and cause most living things on the planet to perish. If an asteroid that big were to land in the ocean, it would cause massive tidal waves hundreds of feet high that would completely scrub the coastlines in the vicinity.[4]

The United States trades with the world. The Chinese, Japanese, Arabs and Europeans buy American bonds. A land war with China, Russia, Germany, Japan, Mexico or any other country is highly unlikely in this century. History has just moved on from the days of Hitler, Stalin and Mao. Clearly the threats from criminal elements that hide behind religion will continue for the foreseeable future. These little religious hoodlums who blow up mosques and schools and shoot girls in the face for wanting an education will not go away in our lifetime. They will continue to cause a lot of human suffering. Religious hoodlums and international drug dealers are not an existential threat to the survival of the species and all life on this planet. They just need to be prosecuted and if convicted of the numerous crimes they are committing, jailed.

In a world where we are a mere 18 hours apart, like each other or not, the threats from an asteroid hitting the earth is common to all governments. Contacting alien life forms that can come to our tiny planet and devour us is a common danger.

Battling super viruses that could kill life on this planet is a common threat. We have to work to fight this pandemic whether we like each other or not. Fighting the criminals require the militaries of the planet to work together. Fortunately for humans, we already have the necessary military might to keep the peace. We do not have the military to protect our tiny planet from asteroids or unwelcome invaders. We need to develop a global military for a space-based planetary defense primarily to protect the planet from asteroids, not space aliens. It is a question of when, not if our planet will be hit by asteroids. Contact by civilizations far more advanced than our own is possible, the planet being destroyed by an asteroid is probable. The math is there.

Life in other parts of the universe is probably. We now know there are billions of planets in the Goldilocks zone. These are close enough to a star to support life but not so far that it is too cold; it is just the right distance.[5] There are billions of galaxies and hundreds of billions of planets capable of having life. The mathematical probability there are other life forms out there in a universe with billions of stars and billions of planets means humans and dolphins here on this tiny planet are not alone in the universe.

Fortunately, we are at great distances from even the nearest star. Asteroids are a different story. To be so imprudent and arrogant as to not prepare for an encounter with aliens will place humanity and the life forms on this planet at great risk. If “they” can get here, they can kill us. Inviting more advanced civilizations to come hunting for us could mean the end of life on this planet. Professor Hawking’s fear of space aliens while alarmist is not anywhere near as likely as asteroids destroying the planet. That has happened before and without a space defense system this will happen again.

From the horrific sins of our European ancestors and the devastation of the indigenous people on this side of this small planet to the destruction of numerous species, we should expect the same treatment. Human history is one of genocide. Exterminating numerous indigenous people with disease and better weapons has prevailed. Unless we work together as a planet, the same fate awaits us.

The Russians, Chinese, Indians, Americans, European Union and others have excellent scientists working in the defense sectors of their economies. This research work on weapons should be accelerated but it must be a joint effort. The danger to our Earth from asteroids and viruses can be ignored only at the peril of all life on our small planet.

Unlike the animal kingdom, humans do not have a contract with nature. When the lion is finished eating, the other animals will literally graze right next to the pride and not be bothered. They all understand that the meal has been provided. The lions do not kill off other animals for “sport” but only to eat what they need. Humans kill for the joy of killing, not because of necessity. Would we expect less of an alien civilization that had mastered the use of the atom for space travel? Hawkin’s space aliens notwithstanding, the far bigger danger is from a collision with an asteroid that would end civilization.

It is not proven science that aliens have been in contact with human civilizations. It is the subject of much science fiction, and terrible documentaries. There is no science that human accomplishments resulted from instruction of space aliens. Most of these entertaining and poorly developed documentaries have been disproven by the scientific community. Still, it is important to develop space-based weapons and better propulsion systems for inter solar-system travel and protection of all life on this tiny planet. The clearest evidence our planet has not been visited by alien civilizations is we are still alive and not occupied.

The current Iron Dome and Missile Defense System that has been developed by the U.S. military and Israel needs to be expanded and deployed in outer space. A global space defense shield will protect the earth from asteroids. A global Iron Dome Missile Defense System needs to be deployed as soon as scientifically possible. Here, research must be accelerated and expanded with all military scientists working together. We all have a shared interest in survival. There are tens of thousands of asteroids just in our solar system. All it takes is one large asteroid and the present life forms on this tiny planet will be exterminated.

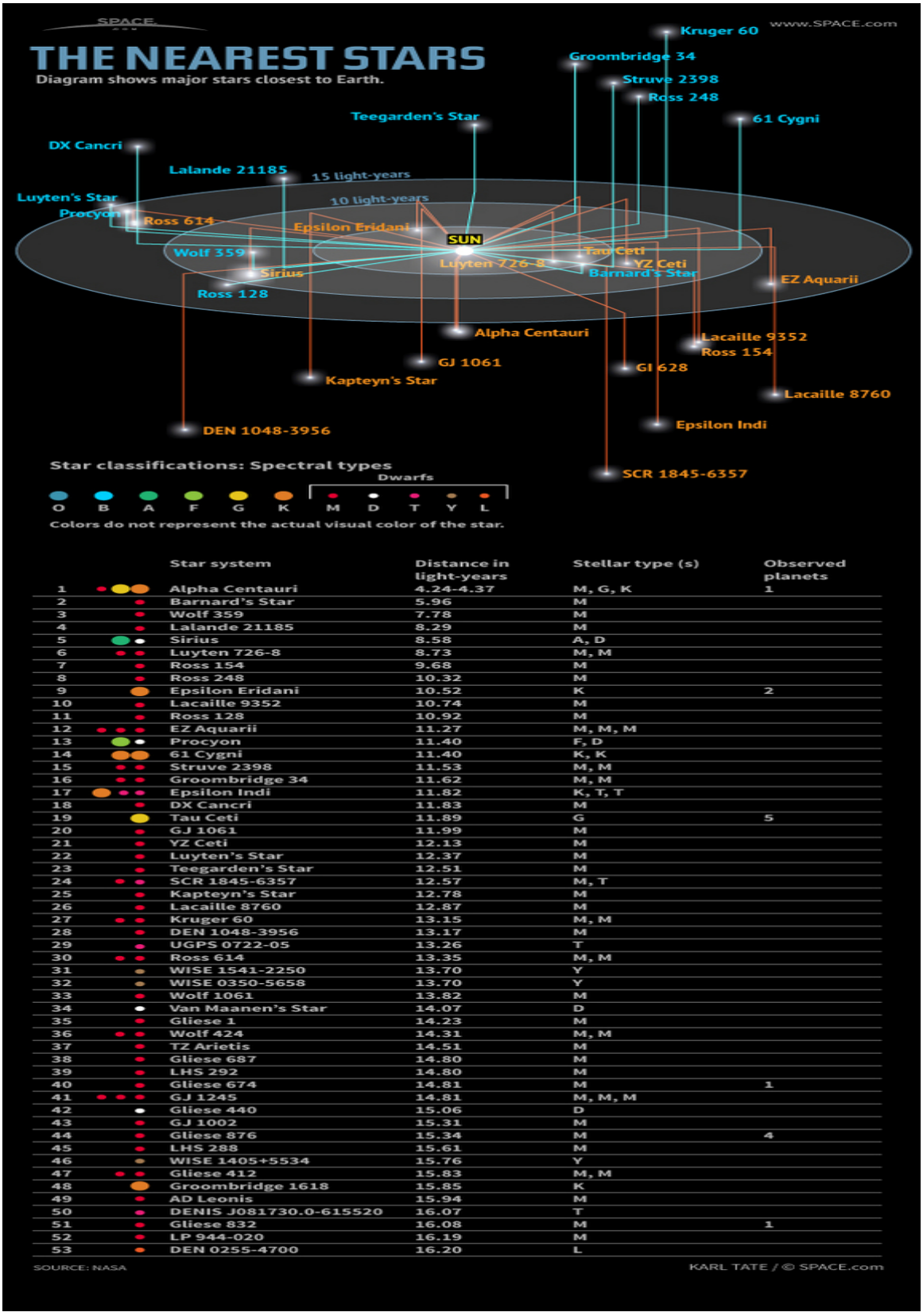
The 1950s and ‘60s brought a host of projects involving the use of nuclear power for space travel. Eventually, the projects were cancelled because of lack of progress and funding. The Americans have not been able to overcome the effects of radiation and the necessity for shielding, thus the extra weight made these scientific projects unfeasible. We gave up instead of continuing with the science of atomic power for space travel. Research in this area should be re-started. New propulsion systems must be developed to reduce the massive distances between planets.

The ocean of our ancestors seemed to go on forever. Technology improved and the distances between continents has been shortened from months to hours. Given the distances of outer space where a Mars mission can take up to ten months, getting there in one week with the use of the power of the atom is something that should be pursued. The Russians have a program underway proposing the use of the atom for long distance space exploration.

Anatolij Perminov, head of the Russian Federal Space Agency, announced that it will develop a nuclear-powered spacecraft for deep space travel. Preliminary design was done by 2013, and nine more years were planned for development (in space assembly). The price was set at 17 billion rubles ($600 million). The nuclear propulsion would have mega-watt class, provided necessary funding is available, Roscosmos Head stated.

> “This system would consist of a space nuclear power and the matrix of ion engines. "...Hot inert gas temperature of 1500 °C from the reactor turns turbines. The turbine turns the generator and compressor, which circulates the working fluid in a closed circuit. The working fluid is cooled in the radiator. The generator produces electricity for the same ion (plasma) engine..."

He said the propulsion can support human missions to Mars, with cosmonauts staying on the red planet for 30 days. This journey to Mars with nuclear propulsion and a steady acceleration would take six weeks, instead of eight months by using chemical propulsion – assuming thrust of 300 times higher than that of chemical propulsion.[6]



	Star system	Distance in light-years	Stellar type (s)	Observed planets
1	Alpha Centauri	4.24-4.37	M, G, K	1
2	Barnard's Star	5.96	M	
3	Wolf 359	7.78	M	
4	Lalande 21185	8.29	M	
5	Sirius	8.58	A, D	
6	Luyten 726-8	8.73	M, M	
7	Ross 154	9.68	M	
8	Ross 248	10.32	M	
9	Epsilon Eridani	10.52	K	2
10	Lacaille 9352	10.74	M	
11	Ross 128	10.92	M	
12	EZ Aquarii	11.27	M, M, M	
13	Procyon	11.40	F, D	
14	61 Cygni	11.40	K, K	
15	Struve 2398	11.53	M, M	
16	Groombridge 34	11.62	M, M	
17	Epsilon Indi	11.82	K, T, T	
18	DX Cancri	11.83	M	
19	Tau Ceti	11.89	G	5
20	GJ 1061	11.99	M	
21	YZ Ceti	12.13	M	
22	Luyten's Star	12.37	M	
23	Teegarden's Star	12.51	M	
24	SCR 1845-6357	12.57	M, T	
25	Kapteyn's Star	12.78	M	
26	Lacaille 8760	12.87	M	
27	Kruger 60	13.15	M, M	
28	DEN 1048-3956	13.17	M	
29	UGPS 0722-05	13.26	T	
30	Ross 614	13.35	M, M	
31	WISE 1541-2250	13.70	Y	
32	WISE 0350-5658	13.70	Y	
33	Wolf 1061	13.82	M	
34	Van Maanen's Star	14.07	D	
35	Gliese 1	14.23	M	
36	Wolf 424	14.31	M, M	
37	TZ Arietis	14.51	M	
38	Gliese 687	14.80	M	
39	LHS 292	14.80	M	
40	Gliese 674	14.81	M	1
41	GJ 1245	14.81	M, M, M	
42	Gliese 440	15.06	D	
43	GJ 1002	15.31	M	
44	Gliese 876	15.34	M	4
45	LHS 288	15.61	M	
46	WISE 1405+5534	15.76	Y	
47	Gliese 412	15.83	M, M	
48	Groombridge 1618	15.85	K	
49	AD Leonis	15.94	M	
50	DENIS J081730.0-615520	16.07	T	
51	Gliese 832	16.08	M	1
52	LP 944-020	16.19	M	
53	DEN 0255-4700	16.20	L	

SOURCE: NASA

KARL TATE / © SPACE.com

Karl Tate courtesy of space.com

The world needs to put their historic tribal differences aside and concentrate on the global threats to our planet's survival. This means we can look out to the universe and search for other life forms like scouts in ancient times observing the enemy. It means protecting the planet from an asteroid, something that will require global military cooperation. A space-based system is too expensive for any one nation but with militaries working together, it is not outside of human capabilities.

Had the indigenous people of the Americas repelled every incursion of my Spanish and Portuguese ancestors and those of the northern European tribes, they would not have been slaughtered. The dinosaurs could not move the asteroid away from the Earth that wiped them out. Alien civilizations are a small threat to humanity but one we need to at least study. Asteroids are a clear and present danger to all life forms on this tiny planet.

The study of advanced weapons should continue for as long as humans occupy this planet. Scientific research on weapons and space travel is what will ultimately save mankind and our animal and plant kingdom from asteroids. We have bigger fights to prepare for than fighting each other. Religious books have their place, but asteroids could not care less about who owns what piece of land based upon 7,000-year-old texts written by stone age tribes who hurled sticks, rocks and metal at each other. Today's tribes have fission and fusion weapons.

We live in a new age. The planet has become tiny and prior to the virus, international travel was a reality for millions of people. We live in an interconnected global world where we can talk with friends on the other side of the planet and with proper planning visit them. We can eat Thai food while we drink Argentine wine, wear Russian clothes, drive Japanese vehicles and talk on cell phones made in China with Korean parts. We are one planet. Developing a global space-based defense system and working together to solve this pandemic are just insurance policies that present day life forms will not suffer the same fate as the dinosaurs. Like each other or not, we can coexist. We have to either work together or die. It is that simple.

PART III
Economics and Exploration

Chapter Ten

Exploration, Immigration and Population Growth

"The human race is likely to be wiped out by a doomsday virus . . . unless we set up colonies in space. Although Sept. 11th was horrible, it didn't threaten the survival of the human race like nuclear weapons do. … In the long term, I'm more worried about biology. Nuclear weapons need large facilities, but genetic engineering can be done in a small lab. The danger is that, either by accident or design, we create a virus that destroys us. I don't think the human race will survive unless we spread into space. There are too many accidents that can befall life on a single planet."

— Professor Stephen Hawking

When the American West was explored, settled and developed, the growth opportunities were as vast as the prairies and as high as the mountains. From the early 1800s to today, both population and economic activity have grown. As the developed world's economies have matured, the rate of economic growth slowed. Trees eventually reach their natural size and stop growing. Animals reach maturity. This is a natural biological process. This is one reason the United States and Western Europe have slow economic growth. The land has been explored and fully developed.

Absent exploration of the inner solar system and a careful exploration of the ocean floors, our country does not have new lands to conquer. We have conquered a continent. Now 500 years after Spanish and Portuguese explorers ventured forth into the unknown, cities like Chicago are home to over three million people. Los Angeles and the surrounding suburbs have a population of over 10 million people. A continent with large stable Native populations now has over 323 million people. With a global population that has exploded in the last 200 years, it is easy to see why we have an excess supply of unskilled and skilled labor.

Immigration from the 1500s to the start of the last century was east to west, primarily from Europe to the Americas. Today, immigration is primarily south to north from the belt near the equator to the United States, Canada and Europe. The problem is, except for Canada, the excess labor cannot be absorbed by the developed economies of the United States and the European Union. Consequently, migrants drown at sea, are murdered by vicious gangs or die in the deserts of the Southwest trying to reach safer lands. Over-population and excess labor have made for a very crowded planet. There are no land areas for people to migrate like in times past. Economics is the heart of the problem with immigration. Labor is unwanted and has no home. Marx' "army of the unemployed" is a reality faced by all nations. What are we going to do with these workers?**1Technological** unemployment is a global reality. And with this pandemic, now there are hundreds of millions of unemployed.

Many countries allow no immigration. Japan has historically not allowed an already crowded country to take on new immigrants.[2] China with 1.3 billion people does not need more mouths to feed.[3] Russia is attracting labor from their former Soviet

republics as their country's work force ages.[4] So where are these people going to work, live and how are they going to eat? Some countries have declining populations like the developed nations in the European Union and Japan, while others are still growing. Over-population has resulted in the earth's resources being stretched too thin.

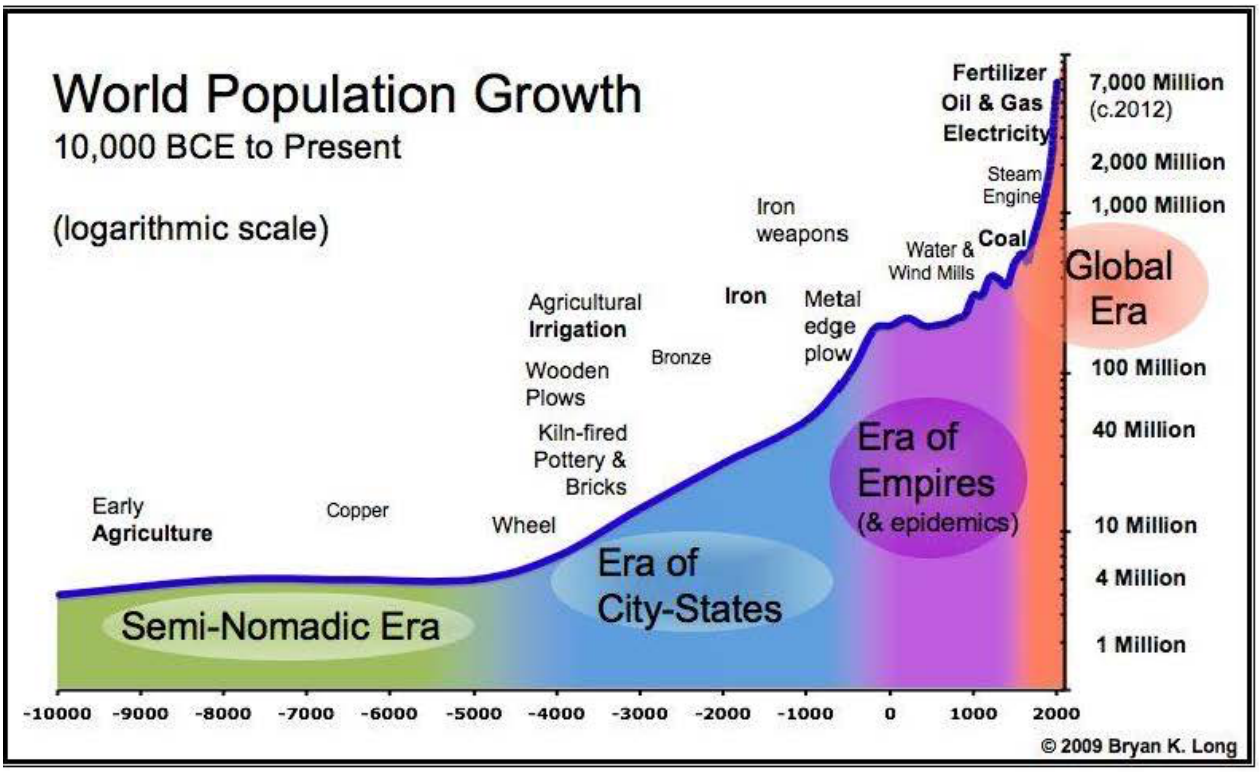
As the world continues to add people at the rate of 70 to 100 million net per year, wildlife becomes extinct; water resources are in decline and pollution of every kind imaginable saturates an already polluted ocean.[5] In the last 500 years, we have explored all of the land areas on our small planet. Like each other or not we have to explore the inner solar system and carefully harness the resources under the waves.

When global exploration started in the 15th century, the planet had less than one billion people. From 1800 to 1930, our population doubled to slightly over two billion. In the last 100 years our population explosion has added another four billion people.

Immigration is in part a result of population growth. It will continue to be one of the most explosive political issues of this century. The political instability in the Middle East, North Africa and Central America resulted in people wanting to migrate to safer lands. While the political problems of war and instability and resulting immigration pressures is well known, policy planners are not proposing long-term solutions. Immigration was the traditional safety valve for government to deal with excess labor and poverty. "Send me your poor, huddled masses yearning to be free" is no longer an accepted slogan for unwelcome immigrants to the United States.

We don't know what the effect is going to be of pandemics on global population. We do know that now millions and millions of people are unemployed, frightened and wondering what is going to happen. Until we get accurate data from all over the world, we are making blind policy decisions. The better approach will be to cooperate with every science department worldwide and create effective treatments for pandemics.

Exploration in this century is going to have to take a back seat to survival. This is the first time in human history that the entire planet has seen a pandemic on this scale. But, this is also the first time in human history that we have had a population of this size, over 7.8 billion and growing. Of course, disease is going to spread like a wildfire in crowded cities like New York, the numerous megalopolises of China and India. There are plenty of human hosts to spread what is essentially a poison. If this does not spur humans to clean the planet and quit mistreating plants and animals, plan on more pandemics.[6]



Some understanding of global demographics is imperative if we are realistically going to address environmental problems and shift resources toward space and ocean exploration. These problems are all intertwined and therefore must be studied together.

According to the World Health Organization:

> [T]he global average life expectancy is 70.5 years as of 2012, with women living an average of 73 years and men approximately 68 years. In 2010, the global fertility rate was estimated at 2.52 children per woman. ***
>
> The nominal 2013 gross world product was estimated at US $74.31 trillion by the CIA, giving an annual global per capita figure of around US $10,500. Around 1.29 billion people (18.4% of the world population) live in extreme poverty, subsisting on less than US $1.25 per day; approximately 870 million people (12.25%) are undernourished, 83% of the world's over-15s are considered literate. In June 2014, there were around 3.03 billion global Internet users, constituting 42.3% of the world population.
>
> The Han Chinese are the world's largest single ethnic group, constituting over 19% of the global population in 2011. The world's most-spoken first languages are Mandarin Chinese (spoken by 12.44% of the world's population), Spanish (4.85%), English (4.83%), Arabic (3.25%) and Hindustani (2.68%). The world's largest religion is Christianity, whose adherents account for 33.35% of the global population; Islam is the second-largest religion, accounting for 22.43%,

and Hinduism the third, accounting for 13.78%. In 2005, around 16% of the global population were reported to be non-religious.[7]

From a historical perspective, 500 years is not a long time. So where are humans next going to migrate? Clearly the small planet has no land areas that need more people. There are numerous projections on population growth and where the size of the number of people on the planet will end up. With urbanization and education, the most likely scenario is the human population will stabilize at between 8 and 9 billion people. Educated women have fewer children but population growth will continue in the short run.

What this will mean for wildlife, climate change from the carbon releases into the atmosphere and the fish stocks seems precarious if not outright dangerous. This is one of the most compelling reasons humans must explore the oceans and outer space and seek to colonize Mars as a second home.

Despite the impressive 500-year conquest of all land areas, the oceans have been overlooked. Why should we explore the oceans? Oceanographer and renowned scientist Dr. Marcia K. McNutt have a reasonable answer:

> "The desire to explore is fundamental to the human spirit. It is what inspires mountaineers to risk frostbite in scaling the highest peaks or malaria in penetrating the deepest jungles. The perils of any terrestrial exploration pale in comparison, however, to the challenges encountered in exploring the deep sea. The vast majority of ocean depths are bone chillingly cold (<2 degrees C), completely dark, and have ambient pressures equivalent to the weight of hundreds of atmospheres. Exploration of the deep sea, then, is impossible without a substantial investment in technology."[8]

Using public funds for exploration is always controversial. The reason for the controversy is there is not an immediate return on investment from exploration to increase the public treasury. Exploration is a long-term investment — sometimes 50 or 100 years. Politics is a short-term profession where the concern is the next election. Properly funding exploration is difficult because of the nature of the people who run governments. Spending money on defense is a great way to keep known constituents happy, campaign contributions flowing and avoid taking a risk on something innovative.

Occasionally there will be a statesman like President Thomas Jefferson with the foresight to realize the gains will arrive in the far distant future. His Louisiana Purchase doubled the size of the United States.

Historically, there have been people with the foresight to lead their countries despite not achieving immediate results. We have to see the future in time spans longer than the next quarterly report or next election. Three months ahead in the corporate world and one election ahead in the political world make planning for solutions to the difficult problems facing the planet nearly impossible. We need the long-term view of saving humanity and the planet from certain destruction. Most people could not care less about which political party runs the United States in this century. The concern is

how the country is governed, not who is in power or what race or sex this person might be.

History is a good guide on what worked. The man chiefly responsible for Portugal's age of exploration and what eventually started European expansion into other parts of our small planet was Prince Henry, third son of King Jao I (John) and his English wife, Queen Philippa of Lancaster. Prince Henry was born in 1394. In 1419, his father made him governor of Portugal's southernmost coasts. Under Henry's leadership, the Portuguese sent numerous expeditions down the west coast of Africa to outflank the Muslim hold on trade routes and to establish colonies.[9]

Superstitions being what they were, these expeditions moved slowly due to the mariners' belief that waters at the equator were at the boiling point, that human skin turned black and sea-monsters would engulf ships.[10] The benefits to Portugal came slowly. It wasn't until 27 years after Prince Henry's death that Bartolomeu Dias braved these "dangers" and rounded the Cape of Good Hope in 1487.[11]

What Henry is most famous for is establishing a naval observatory for the teaching of navigation, astronomy and cartography in about 1450.[12] Prince Henry never lived to see the tremendous benefits to Portugal and Europe from his school of navigation and his push for exploration of a route to India and China. This long-term policy was a very smart political move that gave the tiny country of Portugal an upper hand in the race for the trade routes to Asia and in becoming a global maritime power.

This push for exploration also resulted in developing numerous new types of ships and technology for this small nation. Portugal made the push around Africa and into India and Asia. Their ships continued to evolve, and the technology improved with every voyage. Portuguese explorer Vasco da Gama and others who followed him opened India and Asia to trade about 40 years after Prince Henry died.[13] The long-term effect of Portuguese maritime policy was history-making success.

Sometimes luck plays a large role in world events. Columbus first went to Portugal and lived there for several years, trying to convince the king to commission a voyage westward to the lucrative trade with Asia and India. When Columbus finally got his audience with King John II, the science advisors to the king recommended against the voyage. They believed his math was wrong and it was much farther than his estimates. History proved the Portuguese were correct.[14]

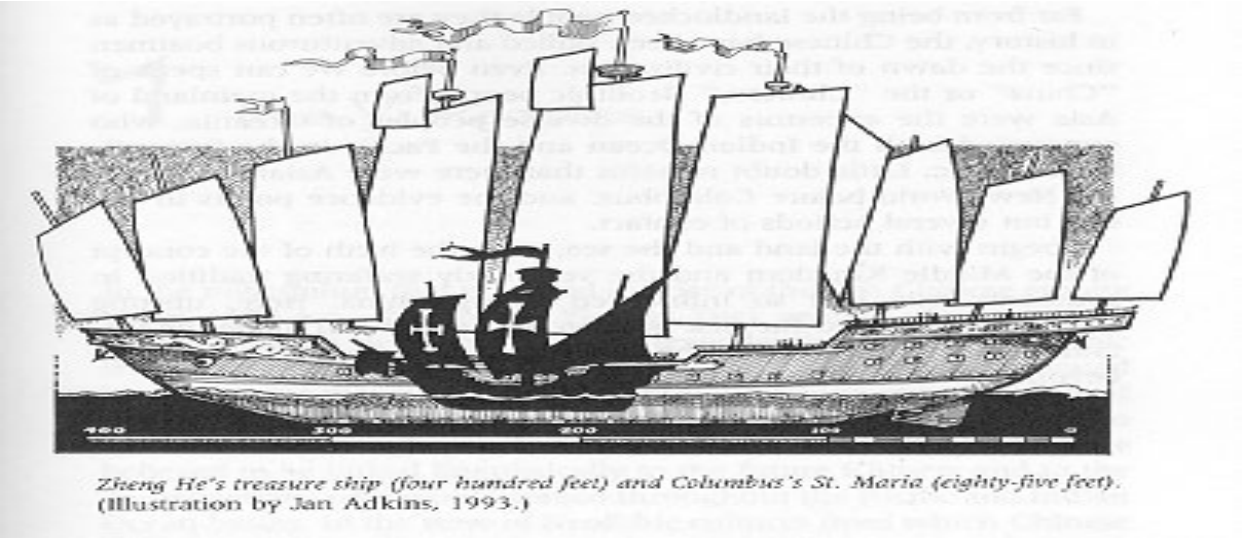
Having failed in Portugal, the Genoan sailor took his vision of a western voyage to India to the Spaniards. Finally, in 1492, Columbus sailed on three tiny ships into the unknown. Spain did not get an immediate benefit. It was not until 1524 — long after Queen Isabella and King Ferdinand had funded these expeditions — that Spain conquered the Aztecs and Incas.[15] Those of us who are older realize that 28 years is not a long time.

Spain temporarily became the most wealthy and powerful nation on the planet. Spain acquired so much gold from the Aztecs and silver from the Incas that these metals created fresh currency and fueled the start of the industrial revolution. Europeans achieved global dominance from their explorations and subsequent colonization of lands already occupied by various indigenous peoples. It was more by

historical accident than by design. And but for a change in policy, China would have ruled the world.

From 1405 to 1433, Chinese Admiral Cheng Ho led an expedition of approximately 30,000 men and some of the largest wooden ships ever built on several voyages exploring the Pacific Rim, India and even into Africa in his service of Emperor Chu Ti. A change in leadership in China resulted in the cancellation of this exploration program and with it, Chinese conquest of the world.[16]

The Chinese had superior ships and equipment. Their flagship was larger than all three of Columbus' ships combined.[9] They had the resources, the science and experience to defeat any navy on Earth. What they lacked was a leader with a vision of the future.



Zheng He's treasure ship (four hundred feet) and Columbus's St. Maria (eighty-five feet). (Illustration by Jan Adkins, 1993.)

Maintaining this fleet was very expensive, given the other Chinese projects taking place during this same period. The new administration decided the economic and cultural benefits were too far removed. That and infighting within the imperial court cancelled the program. The benefits of trade and colonies in other parts of the world was not in the vision of China's future when this very successful exploration program was suddenly cancelled.[17]

The Chinese government did not believe there was any reason for their subjects to travel abroad. They concluded the rest of the world was uncivilized. After canceling the program, they banned all travel abroad and the logs of the great explorer were destroyed.[18] China, which has always led invention and learning, made a historic mistake that created an opportunity for European tribes.

Political decisions become mistakes after time has tested the consequences. Spain soon squandered most of its immense wealth on various misguided military adventures. Spain failed to build a strong manufacturing base and imported finished products from other parts of Europe. This stimulated the economy of other countries but did not improve Spain's economic strength. The circulation of the gold and silver revived the commerce of the long-fallen Roman economy.

The exploration and subsequent acquisition of gold, silver and slaves did not mean Spain used its resources for long-term economic development. As individuals or as nations, how we use our wealth, whether stolen or earned, will determine our lot in life. Spain did not understand the long-term significance of her discoveries.

Being ruled by religious fanatics, eventually Spain lost her power and empire. Like the burning of the library at Alexandria and the subsequent loss of knowledge, some books of the Aztecs and Incas were burned by the Spaniards as “works of the devil.” Superstition prevailed over rational scientific inquiry. With so much yet to be discovered, we can only hope religious extremists will not prevent scientific knowledge from going forward.

The solar system and the oceans will be explored with or without the United States. The resources will be harnessed. New industries will be developed. Exploration and harnessing of the resources of the solar system and the oceans will enable the United States to bring back industries mistakenly exported because of globalization. Either the United States will take this direction, or it will be left behind by history and its economy will continue to stagnate. Eventually, failing to explore and develop new industries, the result will be massive poverty. Eventually the military-industrial complex will become irrelevant to the problems facing humanity in this century. In the age of real time cell phone videos, war crimes are recorded.

People will get injured and die from the accidents that will happen when humans explore the oceans and the heavens. This does not mean we should eschew exploration. The inevitability of death should make life more adventurous. Exploration is dangerous — this is why we should do it. It’s exciting.

Chapter Eleven

American Exploration and Protection of the Oceans

"We must continue as a nation to set out for new frontiers, whether under the sea or into the heavens. We must continue to try to conquer the seemingly impossible -- to discover the unimaginable, to find out more about what's out there, and in the process, about ourselves and what's here."
— President Bill Clinton, June 12, 2000

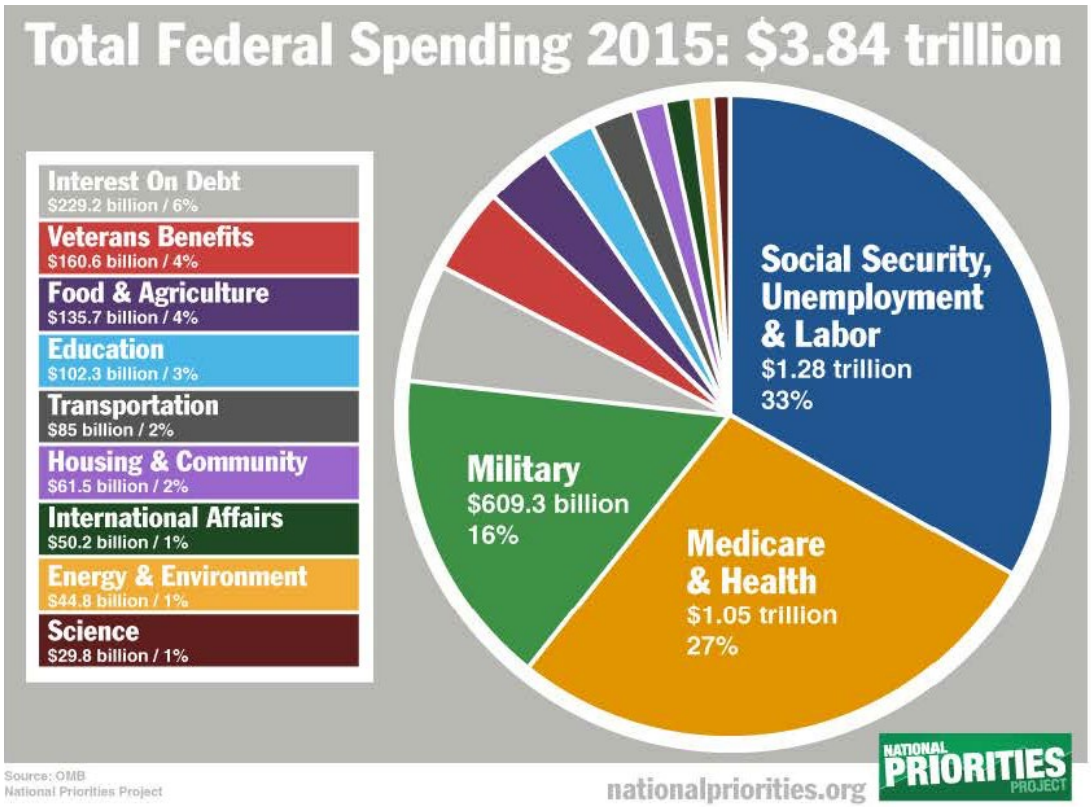
There are very dedicated private individuals and employees of the National Oceanic and Atmospheric Administration (NOAA) who want to explore and protect the vast oceans. For fiscal year 2016, the NOAA proposed a discretionary budget of $5,982,625,000, an increase of $533,716,000, or 9.8 percent above the 2015 adopted budget.[1] This $5.9 billion is less than one week of defense spending. Americans spend ten times this amount on their pets, over $58 billion annually.[2] Given that the federal budget is more than $3.8 trillion, $6 billion is not a lot of money.[3] Under the Trump Administration, that budget has now been decreased to $5.54 billion.

There are no major defense contractors with campaign contributions pushing Congress to build ships for exploration and harnessing the resources of the oceans. The motivation for a push is the curiosity that makes humans venture forth into the unknown. This is where the U.S. Navy and its contractors can provide a tremendous service for all of mankind. By working with other nations and the United Nations, we can protect the oceans. Only with law will there be peace. Ocean pollution hurts humans, not just sea life. If fish ingest garbage, it's passed on to humans when we consume them.

In this century, we will not need 11 super Nimitz aircraft carrier battle groups to fight a nonexistent Soviet Union on two continents. The threats in this century are from international killers and the destruction of the environment.

Because of our mistreatment of the environment, we are facing a global pandemic and more will follow. What we will need in this century is cooperation with other countries on medical treatments for super viruses. These viruses are not going to go away. We can either start to treat plants and animals with respect and stop killing them because we can or we can face more global shutdowns, millions of very sick people and a disruption of our economic system and way of life every time a new virus attacks us. The better national security approach is global cooperation not military competition.

What will work in creating a new industrial base is building deep ocean exploration and mining vessels. For the cost of one Nimitz aircraft carrier battle group, the oceans can be properly explored.



One company stands out in the ability to build the vessels needed to properly explore the oceans. Huntington Ingalls Industries, ticker symbol HII, is the world's foremost builder of high-tech ships. Besides building the Nimitz super carriers, this world-class company builds nuclear submarines and any other deep ocean vessel. In their words:

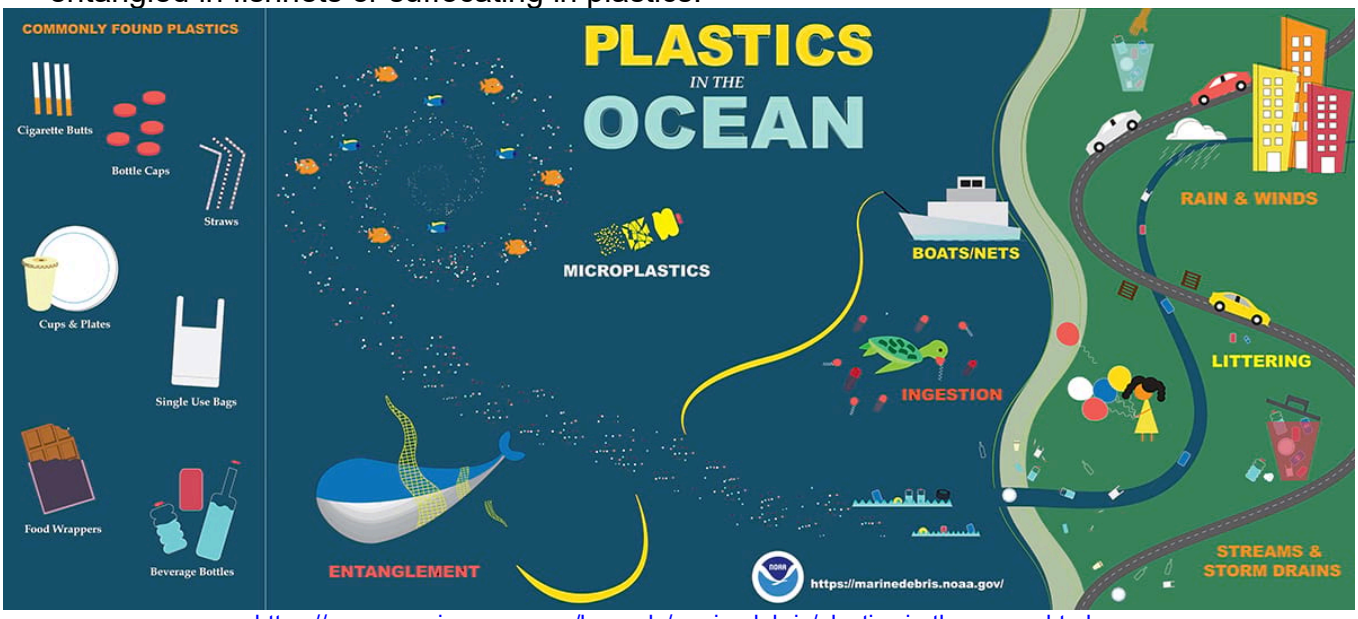
> "Huntington Ingalls Industries is America's largest military shipbuilding company and a provider of manufacturing, engineering and management services to the nuclear energy, oil and gas markets. For more than a century, HII's Newport News and Ingalls shipbuilding divisions in Virginia and Mississippi have built more ships in more ship classes than any other U.S. naval shipbuilder. Headquartered in Newport News, Virginia, HII employs approximately 38,000 people operating both domestically and internationally."[4]

This company can create entire new industries in ocean exploration. They employ thousands of people in several states. The company boasts building the "most complex

ships in the world" and is the only builder of American aircraft carriers. It's one of two that builds nuclear-powered submarines, among other building credits, including amphibious assault ships, warships and missile destroyers."[5]

The oceans and space present a unique opportunity for global cooperation. All of humanity depends on the oceans for food. The Blue Planet is mysterious. It seems that once a week a new species is discovered. Shipwrecks with fortunes are recovered and great wealth lies under the seas.

Protecting the oceans for future generations is an immense job. However, the U.S. Navy and navy defense contractors are up to this task. Exploration and protection of the oceans gives the U.S. Navy a mission of global scope and a moral certainty to which people will be hard pressed to object. Each year more than a million sea birds and over 100,000 marine mammals and sea turtles suffer cruel deaths from becoming entangled in fishnets or suffocating in plastics.[6]



https://oceanservice.noaa.gov/hazards/marinedebris/plastics-in-the-ocean.html

The mission of protecting America from communism has been accomplished. A new and more important mission of global scope is to protect the oceans for all of mankind. The U.S. Navy is the most well-armed and most powerful navy in the history of the world. It can defeat all the navies in the world combined in combat. But we are not fighting the navies of the entire world. Pollution, polluters, religious criminals and drug dealers are enemies of all mankind. These criminals need to be stopped before they cause more harm to our small planet.

Ocean exploration is an adventure. As Jacques Cousteau observed: "From birth man carries the weight of gravity on his shoulders. He is bolted to the Earth. But man has only to sink beneath the surface and he is free. Buoyed by water, he can fly in any direction — up, down, sideways — by merely flipping his hand. Under water, man becomes an archangel."[7]

The world has no choice regarding protection of the oceans. The British Petroleum Gulf of Mexico oil disaster of 2010 was the largest oil spill in world history. With deep sea oil drilling to provide an increasing population of over 7 billion people with fossil fuels, it is only a question of when there will be another disastrous oil spill. Using fossil fuels to provide power for our industrial systems is an environmentally flawed model. There are no easy answers, but the current system of oil and gas use in a world with an increasing population and diminishing resources will mean more deep-ocean drilling and more disastrous environmental results.

Much of the plastic in the ocean is abandoned fishing nets.

By redirecting defense spending toward preservation of the oceans and carefully harnessing resources, the United States will see immediate economic growth. Entire new industries will be developed around deep ocean mining, harnessing energy, protecting wildlife and even building hotels for visitors from above. Only the U.S. Navy and our navy defense contractors are ideally suited for transitioning to protection of resources and deep ocean mining and energy development.

We have controlled the top of the waves for 70 years and kept the peace. Now it is time for the U.S. Navy and the navy defense contractors to have a new mission of global importance: Save the fish stocks and protect the oceans' wildlife and harness the resources under the waves.

Where now there is no demand for warships to fight enemies of the last century, millions of new jobs will be created in steel, engineering, biotech, computer sciences, oceanography, geology and numerous other fields. This will re-industrialize the country. Young people have the right to expect national policy to create a safe environment and a sound economy. This change in defense policy will work.

One individual who has made some of the most spectacular movies ever, used his talent to personally explore the oceans. James Cameron is like the explorers of old. He is smart and brave. Inspired by Jacques-Yves Cousteau in his youth, Mr. Cameron has turned his attention to ocean exploration. He helped design and built a submarine that descended to the deepest place on the planet, the Mariana Trench off the coast of Guam. “Exploration comes with risk, but it is a risk that is worth something.”[8]

His journey into the deep will be followed by other adventurers and entrepreneurs. Curiosity is what drives exploration. Now necessity requires a change in direction. The next administration needs to build ocean-going vessels to do what James Cameron, Jacques-Yves Cousteau, Ferdinand Magellan, James Cook, Admiral Ho and others have done. We need to explore, carefully preserve and develop the massive resources underneath the seas.

Until we in the West work with other countries to stop the dumping of garbage into the oceans, cleanup will not be effective. It is like cleaning the kitchen floor while the sink is still busted and water is overflowing. We have to stop the garbage from entering the oceans. There is tremendous data on how much plastic and garbage is being dumped into the oceans annually. It is near impossible to accurately quantify the massive amount of dumping. Most estimates are of over 8 million tons annually.[9] The Earth Day Network has collected the following data that is available on its website.

“Fact Sheet: Plastics in the Ocean”

The billions upon billions of items of plastic waste choking our oceans, lakes, and rivers and piling up on land is more than unsightly and harmful to plants and wildlife.

The following 10 facts shed light on how plastic is proving dangerous to our planet, health, and wildlife.

1- About 8 million metric tons of plastic are thrown into the ocean annually. Of those, 236,000 tons are microplastics– tiny pieces of broken-down plastic smaller than your little fingernail

2- There are five massive patches of plastic in the oceans around the world. These huge concentrations of plastic debris cover large swaths of the ocean; the one between California and Hawaii is the size of the state of Texas

3- Every minute, one garbage truck of plastic is dumped into our oceans

4- Plastic in the ocean is set to increase tenfold by 2020

5- By 2050 there will be more plastic in the oceans than there are fish (by weight)

6- Plastic is found in the ocean as far as 11km deep, meaning synthetic fibers have contaminated even the most remote places on Earth

7- Many marine organisms can't distinguish common plastic items from food. Animals who eat plastic often starve because they can't digest the plastic and it fills their stomachs, preventing them from eating real food

8- The likelihood of coral becoming diseased increases from 4% to 89% after coming in contact with marine plastic. It also damages the skin of coral, allowing infection. Coral reefs are home to over 25% of marine life.

9- There is more plastic than natural prey at the sea surface of the Great Pacific Garbage Patch, so organisms feeding at this area are likely to have plastic as a major component of their diets. For instance, sea turtles by-caught in fisheries operating within and around the patch can have up to 74% (by dry weight) of their diets composed of ocean plastics.

10-Many fish humans consume, including brown trout, cisco, and perch, have at one time or another, ingested plastic microfibers.[10]

Chapter Twelve

The Law of the Seas

"The law approximates a body of rules that are approximately enforced"
— Dr. Francis D. Wormuth

Although the public has been losing confidence in the American legal system, it works the majority of the time. The international legal system works when large powerful nations obey international law. There are anomalies and difficult cases and irresponsible leaders will occasionally make bad law. Overall, the American legal system works. It is not equipped to deal with failed social or political policies, like the war on drugs or to stop the collapse of the fish stocks or reliance on fossil fuels. These are policies that require national and international leadership from all parts of the political spectrum. Political parties, not just lawyers, need to address the environmental problems of pollution, the collapsing fish stocks and climate change.

Given the disparities between rich, powerful nations and the poor and powerless, our global society needs law to protect the weak from the strong. This includes protecting global wildlife with international conventions and treaties. The nations of the world have come together and worked out a comprehensive international agreement on the laws of the oceans. The legal framework developed important international rules of conduct on fisheries, mammals and the environment. With proper global enforcement, there is a chance at success.

With an exploding population of over 7.8 billion and no world government to protect them, the sea creatures are in harm's way. As author Jonette N. Braathen has observed:

> "With the convention of most of the world's nations at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, Brazil, in 1992, the environmental issues were put high on the political agenda. This was a major event in the process of integrating environmental concern in all sectors - including the fisheries sector. This implies that decision-making in the fisheries sector does not only involve the actual fisheries, but also the consequences and implications for the environment as such. In addition, the fisheries sector is becoming the focus of environmental organizations with a rising concern for the management of marine recourses. Consequently, there is a increasing need for co-operation between fisheries and environmental experts and governments to safeguard the interests of both sectors and their mutual interest in a sound environment and the sustainable management of marine recourses."[1]

Years of negotiation and compromise resulted in numerous agreements to protect the water and wildlife resources of the planet. The end result is the Convention on the Law of the Sea. This historic agreement resulted from years of work and

negotiations between numerous and diverse nations of our global community. The history of this important legal agreement that seeks to stop the damage to the oceans originated with the efforts of many people. Among the most important was Arvid Pardo.

> On 1 November 1967, Malta's Ambassador to the United Nations, Arvid Pardo, asked the nations of the world to look around them and open their eyes to a looming conflict that could devastate the oceans, the lifeline of man's very survival.
>
> "It is the only alternative by which we can hope to avoid the escalating tension that will be inevitable if the present situation is allowed to continue," he said.[2]

> In the words of the United Nations,
> “The Convention on the Law of the Sea (UNCLOS) sets out the legal framework within which all activities in the oceans and seas must be carried out. The legal order established by the Convention is balanced, sound and comprehensive. It provides a basis for the settled order of the oceans and seas for the foreseeable future. The Convention entered into force on 16 November 1994 and over the past years has achieved nearly universal acceptance. As of 2015, 162 countries and the European Union have joined the Convention and were bound by it.”[3]

The provisions are fairly straightforward, see infra.[4] The nations of the world simply recognized a set of laws had to be developed to protect the ocean from the most dangerous predator, people. The convention, which attempts to govern the behavior of all 185 members of the United Nations, has not been ratified by the richest and most powerful, the United States of America.

The main criticisms of the law of the sea conventions come from the limitations on big business's ability to pursue economic development of the oceans. As the CATO Institute observed:

> The LOST (Law Of Sea Treaty) may purport to promote international justice, fairness, and cooperation, but it advances none of those principles. Rather, it raises to the status of international law self-indulgent claims of ownership to be secured through an oligarchy of international bureaucrats, diplomats, and lawyers. And the treaty's specific provisions, mandating global redistribution of resources, creating a monopolistic public mining entity, restricting competition, and requiring the transfer of technology, reflect the statist panaceas discredited by the demise of Soviet-style communism.[5]

The CATO Institute is one of the loudest organizations in the world at opposing the growth of government. However, the spread of law to a lawless world is far different than creating a bureaucratic nightmare that will hinder big business. The exploration of the oceans needs to go forward. The economic development needs to be accomplished in a far different manner than the mining in the 1800s and 1900s in the western United States. The colossal environmental damage from mining and dumping mining waste

that was acceptable behavior before we had environmental laws is not something we wish to repeat in this century. Unregulated ocean mining and oil development destroy fragile sea life.

We can harvest the vast resources of the oceans. But we need not be reckless and indifferent in our approach. If any of you have ever seen the streams below the hard rock mines killed by mill tailings and industrial waste, you would be reluctant to repeat this damage on a worldwide scale under the seas. The last two centuries saw mining activity dangerous to humans and destructive of the environment. As the Natural Resources Defense Council observed about the environmental problems created by Appalachian coal mining:

> -Just one mountaintop removal mine can lay bare up to 10 square miles and pour hundreds of millions of tons of waste material into as many as a dozen "valley fills" some of which are 1,000 feet wide and a mile long.
>
> -The explosive charges used in removal mining shake and crack homes, destroy drinking water supplies and can roll huge rocks onto homes, cars, property and public roads.
>
> -Over the last 30 years, only a fraction of the millions of acres of land that coal mining has disturbed nationwide have been reclaimed to even minimum standards and the habitat and biodiversity lost can never be fully restored.
>
> A total of 1,200 square miles of Appalachian forests will be gone by 2012, according to government projections. Over 300,000 acres of hardwood forests have been destroyed or contaminated in West Virginia alone.
>
> Over 1,200 miles of U.S. streams and rivers were destroyed or polluted by coal mining in central Appalachia over a 10-year span. If strung together, those polluted waterways would equal roughly half the length of the Mississippi River.[6]

Development of the oceans should take place as the extra five billion people we have added since 1940 will need resources and new industries to survive. However, economic development should not be accomplished on a “winner take all,” the undersea environment be damned attitude like we had in the Wild West. That gold rush attitude was devastating to the environment.

An international framework of laws governing ocean exploration and development ultimately helps the United States. Then-retired Sen. Clairborne Pell throughout his career argued strenuously to ratify this important international treaty. In his words:

> Mr. President, my delegation has the honor to introduce resolution A/53/L.45, entitled, "Large-scale pelagic drift-net fishing, unauthorized fishing in zones of national jurisdiction and on the high seas, fisheries by-catch and discards, and other developments." Once again, we would like to extend our gratitude to all those delegations who offered valuable suggestions and worked in a spirit of cooperation to draft this text.[7]

President Clinton failed in getting the United States Senate to ratify this treaty. The Bush administration was preoccupied with a war on Iraq and did not move to make this treaty legally binding on the world's most powerful nation. The pollution of the oceans and the destruction of the fisheries and sea mammals continues. The world's population keeps expanding and the message of consumerism and materialism is the song of the day on Wall Street and Madison Ave.

The Trump Administration has no interest in getting the U.S. Senate to ratify this important treaty. It needs to be a major political issue in the next election cycle. Meanwhile, the fish stocks continue to be decimated and plastic continues to infest every part of the ocean. As the world's largest economy, we also create the most pollution and consume the most resources. It is time to lead and ratify this treaty.

American leadership in this century requires concerted action with the global community to revive the fish stocks, clean the oceans and work with other nations on solving the problem of pandemics. The United States needs to ratify the Law of the Seas Convention. Governments, the fishing and tourist industries and non-profits can all work together to turn the collapse of the fish stocks around. This is not impossible; it just takes public awareness of the problems and proposed solutions.

There are excellent organizations out there working hard to protect our fragile environment and change consumption. Conservation International works all over the world. Its Chief Executive Officer, Peter Seligmann, explained why we have to invest in protecting nature. Gathering data will be essential to protecting our tiny planet.

> "This investment in gathering, synthesizing and sharing new data is necessary for creating a society that can weather the pressures of change. Over the next century, the world's population will grow to over 9 billion people. We will double our demand for food, energy and water, and the changing climate will continue to exacerbate the uncertainties we face. Nature is the most cost-effective source we have to meet these demands. Monitoring its health will be key to ensuring a continual supply of the natural capital it provides to all of us."[8]

Adopting the Law of the Seas Convention by the United States can turn around the decline of the fish stocks and reverse the environmental damage being inflicted on the oceans. This will require a change in thinking. We need to place the interests of the planet above pursuing profits. We need the United States to ratify the Law of the Seas Treaty. Protecting the oceans can be accomplished with the creation of a Global High Seas Marine Preserve. We will either stop industrial fishing or we will collapse the global fisheries. It really is that simple.

Chapter Thirteen

The Global High Seas Marine Preserve

"The fate of the living planet is the most important issue facing mankind."
— Gaylord Nelson

Changing the law works. It happens from the grass roots up. It makes a huge difference. Slavery was outlawed because people at the grass roots level worked to stop it. Women in the Western world were given the right to vote because they forced change on unwilling males. Change is the one constant in human life. It can be good. What we are proposing is changing international law by amending the Law of the Seas Treaty and creating a Global High Seas Marine Preserve. This will protect the wildlife in the oceans for all time and eternity. The present system of almost no protection of the ocean's wildlife is not working. This change is only going to happen from the grass roots up. Global consumers not buying tax subsidized imported, diseased seafood will result in change. Either way, the destruction of the fisheries is going to stop. We will either change the law and end industrial commercial fishing, or we will completely destroy the fisheries and there will be no wildlife in the oceans.

National interests and greed often compete with global interests of a healthy environment. The impending collapse of the fish stocks is a global problem that can be solved. Commercial interests subsidized by national governments who don't care about the collapse of the fish stocks will ruin it for the rest of us. Failure will affect all future generations. We need not like each other; but like each other or not we have no choice but to stop the slaughter of the oceans' wildlife. The reality is humans need the fish from the oceans for food. As the Pew Charitable Trust Global Ocean Legacy observed on their website:

> "The ocean covers nearly three-fourths of the globe and is home to nearly half of the world's known species, with countless yet to be discovered. Producing almost half of the oxygen in the atmosphere, it also absorbs vast amounts of carbon dioxide. The ocean helps support more than 250 million people who depend directly or indirectly on fishing for their livelihoods and provides the main source of animal protein to more than 2.6 billion people. The oceans play an essential role in sustaining life on our planet, but human activities are increasingly threatening their health. Research shows that very large, fully protected marine reserves are key to rebuilding species abundance and diversity and protecting the overall health of the marine environment."[1]

Tens of thousands of people and hundreds of organizations all over the world know the problems created by overfishing. Many organizations all over the world are working to stop the slaughter. There clearly are solutions that can be implemented immediately. What is working globally are marine preserves. If we protect all of the oceans, not just the less than five percent, the wildlife will survive. A Global High Seas

Marine Preserve that protects all of the oceans will put humans and the wildlife on an even playing field. The other choice is extinction.

A marine preserve is a protected ocean area like a national park. It is off limits to development and to commercial fishing. When you travel to the Florida Keys, the fish are protected by the Florida Keys National Marine Sanctuary. This beautiful marine preserve is jointly operated by the National Ocean Atmospheric Administration and the State of Florida. Fishermen can recreationally fish, divers can visit the coral reefs and shipwrecks, and enjoy the beauty of protected oceans.

Contrast that national marine preserve with the fish stocks on the eastern coast of Florida. When you fish off the pier at Deerfield, Florida, you might catch a sunburn and if lucky you might get one bite or two. The fish are few and the beaches are full of people. Between polluted oceans and overfishing, fish stocks and marine life globally are in big trouble.

The Office of National Marine Sanctuaries is the trustee for a network of 14 marine protected areas encompassing over 170,000 square miles of marine and Great Lakes waters from Washington state to the Florida Keys, and from Lake Huron to American Samoa.[2]

(National Oceanic and Atmospheric Administration website)

As of 2015, there are over 6,500 protected marine areas on our small planet. Many are poorly managed. These protected areas represent less than 4 percent of the ocean.[3] With over 96 percent of the oceans available for huge fishing vessels armed with 40 mile nets, radar, sonar, small planes as spotters and miles and miles of long lines, it is not a fair fight. The fish stocks are being slaughtered like the passenger pigeon and the buffalo. This slaughter can and must be stopped. The fish stocks can be revived. It is a winnable battle.

Fish reproduce with tens of thousands of eggs. Given protection, many species can increase their numbers in short order. They are not like mammals that take months to reproduce and have small numbers of offspring. Fish just need time to reproduce. It is not prudent to kill the juveniles so some rich family in a rich country can have food choice. The better solution is protection of the fisheries and treating fish as a resource. Increase their numbers so more people can have protein.

Our goal is to save fishing, not end it. We want future generations to enjoy the healthy benefits provided by eating clean, sustainable ocean caught wild fish. Humans have been eating fish since time began. We want this activity to continue. This is why we are advocating the creation of a Global High Seas Marine Preserve. We are trying to save fishing, not end it.

The network includes a system of 13 national marine sanctuaries and the Papahānaumokuākea Marine National Monument.[4]

There is hope. Unlike the military-industrial complex or the firearms lobby, the Fishing Industrial Complex is not very powerful. The fishing industry as a whole is not very large. Without government subsidies, these industries can't compete. According to CNN International:

> "The worldwide fishing industry employs around 200 million people, generating $80 billion a year. But a hefty chunk of the industry's revenues come from subsidies, which are currently estimated at around $34 billion a year. Those most responsible for subsidizing the fishing industry are Japan (spending $5.3 billion a year), the European Union ($3.3 billion) and China ($3.1 billion), according to activist group Oceana." [5]

There are giants of commerce out there in the global economic jungle. Retail global giant Wal-Mart has gross revenues of over $480 billion. Technology giant Apple has annual gross revenues of over $259 billion. Defense giant Lockheed Martin has

gross revenues of over $53 billion.[6] Commercial fishing companies would not survive without government subsidizes. Banning government subsidies globally and creating a Global High Seas Marine Preserve, the fish stocks can be saved. This is an environmental fight we can win.

Closing off the high seas to commercial fishing will allow the fish time to reproduce. Then humans to continue to harvest fish by careful regulation of the catch. The United States can help the rest of the world set up the regulatory framework to protect their national fisheries. What this change in international law will accomplish is save the fisheries as a food source.

World-renowned scientist Dr. Daniel Pauly describes what has happened to the fish stocks:

> *Our oceans have been the victims of a giant Ponzi scheme, waged with Bernie Madoff–like callousness by the world's fisheries. Beginning in the 1950s, as their operations became increasingly industrialized — with onboard refrigeration, acoustic fish-finders, and, later, GPS — they first depleted stocks of cod, hake, flounder, sole, and halibut in the Northern Hemisphere. As those stocks disappeared, the fleets moved southward, to the coasts of developing nations and, ultimately, all the way to the shores of Antarctica, searching for icefishes and rock cods, and, more recently, for small, shrimplike krill. As the bounty of coastal waters dropped, fisheries moved further offshore, to deeper waters. And, finally, as the larger fish began to disappear, boats began to catch fish that were smaller and uglier — fish never before considered fit for human consumption. Many were renamed so they could be marketed: The suspicious slimehead became the delicious orange roughy, while the worrisome Patagonian toothfish became the wholesome Chilean seabass. Others, like the homely hoki, were cut up so they could be sold sight-unseen as fish sticks and filets in fast-food restaurants and the frozen-food aisle.*
>
> *The scheme was carried out by nothing less than a fishing-industrial complex — an alliance of corporate fishing fleets, lobbyists, parliamentary representatives, and fisheries economists. By hiding behind the romantic image of the small-scale, independent fisherman, they secured political influence and government subsidies far over what would be expected, given their minuscule contribution to the GDP of advanced economies — in the United States, even less than that of the hair salon industry. In Japan, for example, huge, vertically integrated conglomerates, such as Taiyo or the better-known Mitsubishi, lobby their friends in the Japanese Fisheries Agency and the Ministry of Foreign Affairs to help them gain access to the few remaining plentiful stocks of tuna, like those in the waters surrounding South Pacific countries.*
>
> *Beginning in the early 1980s, the United States, which had not traditionally been much of a fishing country, began heavily subsidizing U.S. fleets, producing its own fishing-industrial complex, dominated by large processors and retail chains. Today, governments provide nearly $30 billion in subsidies each year — about one-third of the value of the global catch — that keep fisheries going, even when*

they have overexploited their resource base. As a result, there are between two and four times as many boats as the annual catch requires, and yet, the funds to "build capacity" keep coming.[7]

The result of industrial harvesting of fish by giant vessels like the massive Atlantic Dawn is one cause of the destruction of the world's fisheries. It is reminiscent of the slaughter of the buffalo when railroads made their way across the continent. When faced with the reality of extinction, some forward-thinking individuals saved the buffalo. Once buffalo herds were massive and ran from the horizon to as far as the eye could see. Humans almost hunted them to extinction.

Whales were almost hunted to extinction. Without the hard work of conservationists, every last whale in the oceans would have been hunted to extinction. Mountain gorillas and other large apes, too, would be extinct but for the efforts of brave individuals like Jane Goodall and numerous others. It takes courage to stand up against the forces of greed and sheer stupidity. The planet has concerned individuals like environmentalist Jane Goodall, scientist Dr. Daniel Pauly, director and adventurer James Cameron, actor Harrison Ford, hundreds of non-profit organizations, government agencies and tens of thousands of workers and millions of citizens globally that care about the environment.[8] Working together, public education and change is possible.

Stopping giant commercial fishing vessels from slaughtering the fish stocks can be accomplished with a change in international law. If millions of citizens demand that the fish stocks be saved from collapse, politicians will amend the Law of the Seas Treaty and create a Global High Seas Marine Preserve.

Politicians are usually cowards. They don't lead, they follow. Citizens need to lead their politicians in the right direction and force change from the bottom up. Like all social movements, it will not happen from the top down. If citizens hold public protests of commercial fishing vessels and boycott the purchase of endangered fish, the slaughter will stop. Here is where the consumer, not the commercial fishing companies, have power. Nobody is forcing anyone to buy fish that are going to become extinct from overfishing. If there is no profit in fishing, these companies will stop fishing.

The best way to do this is eat fish only from your own country that are not endangered from being over-fished and are sustainably caught. If every country works to protect their fisheries and marine resources as the United States does, there will not be problems with the collapse of the fisheries, overfishing and engaging in reckless unsustainable fishing practices. The United States can assist these countries in creating the legal and social framework to protect their marine life. This can be part of the foreign aid and it will provide training and work for American college students interested in environmental studies, oceanography, marine biology and many other fields of study.

As Charles Clover observed, "Atlantic Dawn is the greatest fish killing machine the world has ever seen."[9]

(Charles Clover online at: http://britishseafishing.co.uk/atlantic-dawn-the-ship-from-hell/)

The impending collapse of the fisheries is the result of pursuit of short-term profits rather than the long-term survival of the fish stocks. These huge commercial fishing vessels are emptying out the oceans. Governments know about the slaughter. Politicians receive campaign contributions to be elected. They take money from the highest bidder. In return for campaign contributions, politicians provide tax subsidies to a fish industry too large for the amount of fish being harvested. The result is massive overfishing by the European Union, Japan, Indonesia, Thailand and totalitarian states like China. The marine life does not have a lobby with governments.

Politicians can be voted out of office. If the fish stocks become extinct, they cannot be voted back to life. Politicians have the same data as the scientific community. They don't care if the fish stocks collapse. If you like sea food then you need to vote these individuals out of office. If you live in China, you need to get involved with the Communist Party and ask them to take the trawlers off the high seas and stop all trade in shark fins.

The Chinese Communist Party cares very much about the environment. They work hard to protect the giant pandas and are investing billions to clean their air, developing electric vehicles, high speed trains and making their country the most modern that is possible. Being polite and asking the Chinese government to help will get results. Having bad manners is the last thing that will work with Chinese culture. They will look at you like you are a fool. Good manners is a must in Chinese culture.

Another reason extremist politicians will not work to stop the slaughter of the fish stocks and are not concerned about environmental issues are their religious beliefs. Some extremist politicians believe the problems facing the planet are signs of "the end of times." Trying to solve these problems is going against "God's will". The "End of Time" politicians don't care about the future of the Earth because they don't believe there will be a future. As Glenn Scherer observed:

> "People under the spell of such potent prophecies cannot be expected to worry about the environment. Why care about the earth when the droughts, floods, and pestilence brought by ecological collapse are signs of the Apocalypse foretold in the Bible? Why care about global climate change when you and yours will be rescued in the Rapture? And why care about converting from oil to solar when the same God who performed the miracle of the loaves and fishes can whip up a few billion barrels of light crude with a Word?"[10]

When democracies elect people with no regard for the health and wellbeing of the planet, of course the fish stocks will collapse. This can all be changed with votes.

The impending collapse of the fish stocks is best exemplified by the decline of the jack mackerel. Having fished out the Mediterranean and the North Atlantic and been banned from destroying the protected fish stocks of the United States, the fleets of Europe and Asia are attacking the jack mackerel in full force. The result of greed, political ineptness and mismanagement is that a natural resource becomes extinct. As Mort Rosenblum and Mar Cabra reported in a New York Times story:

> "It's going fast," he said as he looked at the 57-foot boat. "We've got to fish harder before it's all gone." Asked what he would leave his son, he shrugged: "He'll have to find something else."
>
> Jack mackerel, rich in oily protein, is manna to a hungry planet, a staple in Africa. Elsewhere, people eat it unaware; much of it is reduced to feed for aquaculture and pigs. It can take over five kilograms, over 11 pounds, of jack mackerel to raise a single kilogram of farmed salmon.
>
> Stocks have dropped from about 30 million metric tons to less than a tenth of that in two decades. The world's largest trawlers, after depleting other oceans, now head south toward the edge of Antarctica to compete for what is left.
>
> An eight-country investigation of the fishing industry in the southern Pacific by the International Consortium of Investigative Journalists shows how the fate of the jack mackerel may foretell the progressive collapse of fish stocks in all oceans.
>
> The fate of this one fish reflects a bigger picture: decades of unchecked global fishing pushed by geopolitical rivalry, greed, corruption, mismanagement and public indifference. Daniel Pauly, an eminent University of British Columbia oceanographer, sees jack mackerel in the southern Pacific as an alarming indicator.

"This is the last of the buffaloes," he said. "When they're gone, everything will be gone.".[11]

Unlike the massive military-industrial complex and the $1 trillion defense budget, the fishing industry is tiny. This problem can be solved by giving the world's navies a new mission, protect the high seas from illegal commercial fishing. While this is being done, expand the network of marine preserves globally from less than 5 percent of the ocean to 100 percent with the creation of a Global High Seas Marine Preserve. Limit the size of fish catch by quotas approved by scientists, not politicians or industry.

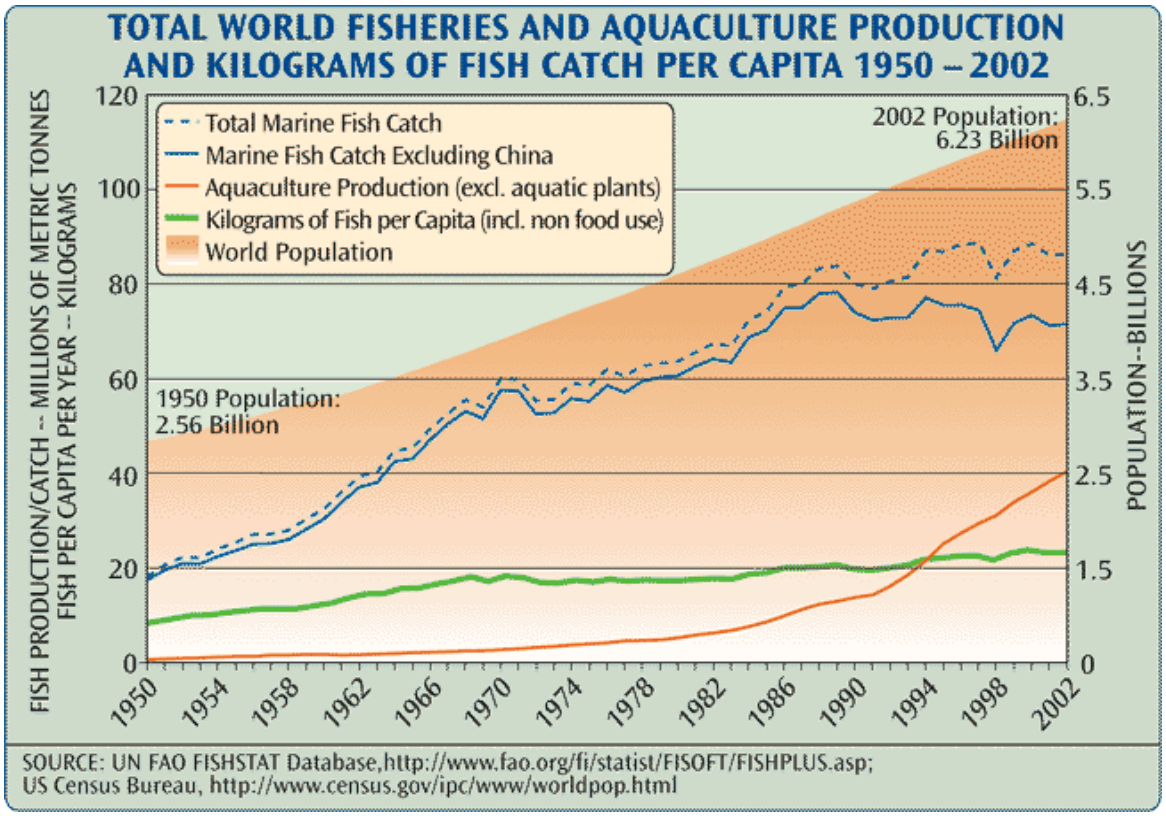
The impending collapse of the fish stocks results from numerous historical forces all coming together at once. The human population increased from 1 billion in 1800 to over 7.8 billion in 2020. In the same 220-year time frame, technology vastly improved. As technology developed, the natural world was slaughtered. Ancient trees were no match for chain saws, power blades, bull dozers, explosives and saw mills. Buffalo and whales cannot fight back against human weapons.

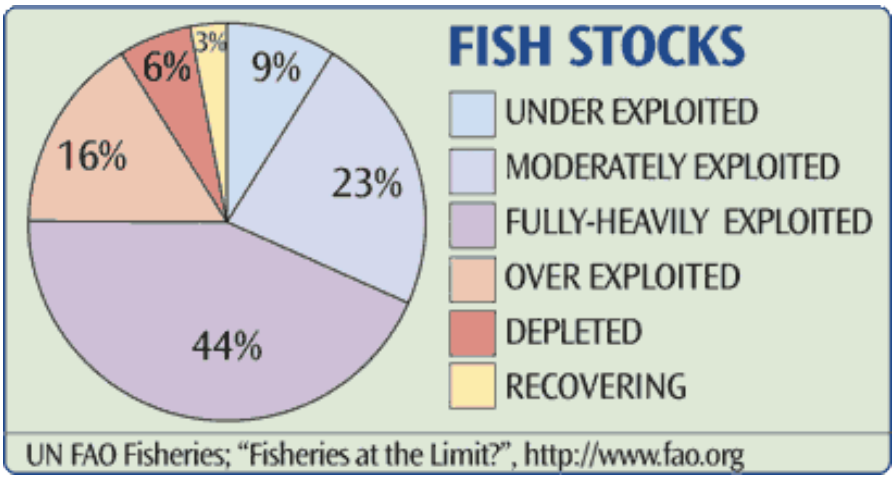
By the year A.D.1800 in the Western calendar, human population was exploding. Yet there was wilderness; numerous areas of the planet were unexplored. Whaling was an industry that had not yet driven these species to the brink of extinction. Buffalo were hunted and used for food and furs. Numerous indigenous nations still had territory they could defend. European powers had global empires and cultures were distinctly different. There were few cities on the planet with over one million people. No city had electricity. Automobiles, planes and coal-fired power plants did not exist. Nuclear power was not even an idea. Global fish stocks were healthy. The ancient forests of giant Redwoods and Sequoias were largely intact. Wolves and grizzlies still roamed the mountains and plains of America.

Globally, the mountain gorillas had their own vast territories along with the wild elephants, and tens of thousands of other species. Humans lived near these wild animals but could not slaughter them to extinction.

Today, a simple creature like a tuna fish cannot possibly survive against a modern killing machine like the giant fishing vessels. It has never been a fair fight between modern technology and the natural world. It is like a human armed with a bow and arrows up against a F-22 fighter or a giant redwood against a chainsaw. Time from a historical perspective is short. Approximately 500 years ago, in the time of Columbus there were millions of sea turtles. Their sound could be heard from miles off shore. A mere 200 years ago the oceans were filled with numerous types of fish. The natural world was still intact but changing.

As population increased and technology improved, fish stocks are collapsing from overfishing.





"75% of the major marine fish stocks are either depleted, overexploited or being fished at their biological limit." [14]

The legal framework already exists under international law to create these marine preserves. The 1958 International Convention on Fishing and Conservation of Living Resources of the High Seas includes the following provision:

Article 4

1. If the nationals of two or more States are engaged in fishing the same stock or stocks of fish or other living marine resources in any area or areas of the high seas, these States shall, at the request of any of them, enter into negotiations with a view to prescribing by agreement

> for their nationals the necessary measures for the conservation of the living resources affected.[15]

The Obama administration could not obtain the cooperation of Congress on the important issue of preserving the fish stocks. Consequently, President Obama took the initiative. He increased the size of the Pacific Remote Islands National Monument established by President George W. Bush. America's largest marine preserve was made six times larger. Marine preserves protect the entire ecosystem of the oceans.[17] Increasing the size of this National Monument generated little media attention. Few fishermen venture out into this area, probably because it is not a major fishing site. The Trump Administration is not interested in conservation environmental issues.

What the Obama Administration failed to do was seize the opportunity and call an international conference on the oceans and create a Global High Seas Marine Preserve. "The worst culprits contributing to this crisis are developed countries, with their vast fleets and technological prowess. Ten countries — Japan, South Korea, Taiwan, Spain, the United States, Chile, China, Indonesia, the Philippines, and France, in descending order – account for 70 percent of the fishing by value in the high seas".[17]

Because technological limitations no longer limit the ability to fish, a Global High Seas Marine Preserve is an excellent global policy change to revive entire ecosystems. Again, the U.S. Navy, working with other nations, can patrol it and keep these preserves free from poachers. Absent people foregoing fish as food, a Global High Seas Marine Preserve patrolled by the world's navies solves reviving the fish stocks.

The power of the consumer can force substantive change. The United States, Canada and Mexico, the three North American Free Trade Agreement (NAFTA) nations, form the largest economy on the planet with a combined GDP of over $22 trillion dollars.[18] The European Union is the second largest economic power with a combined GDP of over $21 trillion dollars.[19] The two world's largest markets can pressure any nation to comply with accepted global rules of behavior. Here the public can help out by boycotting nations' products that refuse to quit overfishing and destroying the oceans.

Consumer boycotts work. When enough people pressure South Africa, and the hard work of Nelson Mandela and others, the evils of apartheid finally ended. The ultimate power to create change always lies with the individual in a consumer-based economy.

The United States' consumer must take the leadership role on this issue. The environmental solution to saving the wildlife in the oceans is in your wallet. Don't buy seafood from other countries.

There are inexpensive solutions to the fish stock collapse problem. The Global High Seas Marine Preserve is initiating a global education campaign on overfishing and the consequences. Advertising can be donated by the major media conglomerates and the ads can be produced by environmental groups and research universities. Shareholders can insist that retail chains like Wal-Mart and Kroger only sell U.S. protected sustainable catch. Consumers can win this battle by only purchasing ocean safe seafood and not eating Ahi tuna, sea bass and other endangered species.

To accomplish the removal of the fishing vessels, the world's governments will have to initiate condemnation proceedings and purchase them from their owners. Governments will have to provide unemployment insurance for the fishing crews who will temporarily lose their jobs. The developed world must help these countries with foreign aid to offset this financial loss by the fishermen. It is something we can accomplish with governments and non-government organizations working together.

Only a handful of massive fishing vessels exist. According to the United Nation's Food and Agriculture Organization (FAO), there are less than 30,000 industrial size commercial fishing vessels in the world. Of these, approximately 15,000 belong to China.[20] These fishermen can convert their fishing vessels to tourist ships. Ecotourism can replace industrial fishing and offset the removal of these massive killing machines from the oceans.

These huge fishing vessels are not part of the fishing done in traditional societies who depend on the oceans for nutrition. The expensive ocean-going industrial fishing vessels belong to a handful of countries and companies. The indigenous fishermen who feed their families do not use giant ocean-going vessels complete with sonar and massive industrial nets and freezers. They use traditional fishing techniques that do not drive species to extinction.

Good governance, public awareness and responsible industry practices can turn this around. As the FAO observed in its outlook on the future of the global fish stocks:

> "The future of the fisheries and aquaculture sector will be influenced by its capacity to address strategic interconnecting challenges of global and local relevance. Population and income growth, together with urbanization and dietary diversification, are expected to create additional demand for animal products, including fish in developing countries. Thus, the future of the sector will be the result of social development, in its ecological, social and economic contexts, at local, regional and global scales."[21]

There are some successes in stopping the slaughter of the oceans. The tiny nation of Kiribati has banned all commercial fishing in an area the size of California.[22] This tiny country is taking on the global fishing industry by creating the world's largest marine park to help the wildlife recover. When the smallest countries on the planet decide to protect their wildlife, the largest countries can also choose the moral high ground and stop the slaughter of the oceans. A problem faced by small countries is protecting the marine preserves. They don't have powerful navies and sufficient patrol vessels.

Again, the best protection of the fish in the world's oceans is to expand national marine preserves and make the high seas off limits to commercial fishing. This proposal to make the high seas off limits is being made by numerous international organizations. That move is long overdue and the world is finally moving in that direction. The world's navies can help small nations enforce this ban to help revive the fish stocks.

Dr. Daniel Pauly, the world's foremost scholar on fisheries, said this about the initiative to close the high seas:

> “The expansion of the law of the seas is not on the agenda of any country. It’s an idea whose time has not yet come. It has only recently been proposed. It will take one to two decades.”
> “But if we continue with business as usual, I am afraid that the fish stocks will completely collapse. Closing the high seas to fishing is about 60 percent of the oceans. This would benefit all countries. The catch would improve so it would make it that the fish stocks are healthier and therefore larger catch.”[23]

While he is concerned about the destruction of the fish stocks, his work and the work of many scientists has led to great changes.

> “Large marine preserves is an idea whose time has come. There are certain areas like Antarctica that could be declared as a marine reserve. Closing the high seas would help large fish like tuna and others. Technically it would work. Coastal fish would not be protected. Species like rock fish would not have protection.”[24]

These coastal fish could be protected by local marine reserves and laws of individual nations that have a vested interest in the preservation of their fisheries. The Florida Keys and the recent protection of Bristol Bay are prime examples of the United States working to protect marine wildlife.

The United States consumer must lead on this issue to move the world in the right direction. As Dr. Pauly observed: “The task in the United States is to get the U.S. to ratify the Law of the Seas. It is simply not ratified. The crazies in Congress will not allow it to be ratified.”[25]

The collapse of the fisheries is a tragedy of the commons. Since the tuna and other ocean catch belong to everyone, they are protected by no one. The goal is to get yours before they are all fished out. By creating a Global High Seas Marine Preserve and inviting the fishing nations we can preserve the fish stocks. The 200 miles nation state limit insure that nations can still fish. But by protecting the wild stocks out in the high seas they won’t be overfished. The tragedy of the commons has resulted in the massive damage to the fish stocks. The large fish will be slaughtered to extinction without global protection.

In 1968 Garrett Hardin concluded “a finite world can support only a finite population; therefore, population growth must eventually equal zero”. His article in Science “The Tragedy of the Commons” shaped environmental thinking and is required reading to understand the problem of the collapse of the fisheries.[26] The tragedy of the commons is the concept that individuals acting independently with their self interest in mind will behave contrary to the best interests of the whole group by depleting some common resource. Here the common resource is the fish that are owned by everyone. Since no one fishing company owns them and no one nation can protect them this resource is over fished. The fishermen try to get their share before every last fish is

gone. Despite the limits recommended by scientists without enforcement, the fish stocks continue to decline.

The tragedy of the commons with the fish stocks can be overcome by recognizing that the fisherman cannot be marginalized, but they cannot be subsidized either. The 200 miles national limit will still allow fishing within the national boundaries of the various nations that boarder the oceans. Now humans just need to take it to the next level and make the high seas off limits to commercial fishing. This legal move will save the fisheries for future generations. The next United States president needs to call for the ratification of the Law of the Seas Treaty and host an international conference for the creation of a Global High Seas Marine Preserve. This political move will get the participants together to solve this problem of overfishing. The United Nations, which many scholars consider toothless, can working through the Security Council oversee this ban on industrial commercial fishing. Like all international agreements, it can be accomplished because it is in everyone's interest that the fisheries not collapse.

Humans have been fishing since we have been on the planet. We can continue to fish for all time and eternity. We just cannot empty out the oceans with these giant commercial fishing vessels that make up a small part of global fishing but do the most damage. The interests of a handful of rich people who are destroying the oceans with commercial fishing are outweighed by humanity's interest in preserving the fish stocks. This is one fight against a very small handful of wealthy individuals we can win.

It is not all doom and gloom. The zoonotic viruses will reduce human populations and make them more compatible with the natural world. We are guests on this small planet. The massive unemployment caused by this pandemic has resulted in people being much poorer. Food choice has changed. We cannot eat seafood brought in from all over the world. Food choice will soon be a thing of the past. What we will see is more people eating locally. The fisheries will recover if we give them the opportunity. A Global High Seas Marine Preserve is a simple change in international law.

Chapter Fourteen

The Benefits of Space and Ocean Exploration

A rat done bit my sister Nell with whitey on the moon her face and arms began to swell and whitey is on the moon I can't pay no doctor bills but whitey is on the moon ten years from now I'll be payin' still with whitey on the moon ya know? the man just upped my rent last night cause whitey is on the moon no hot water no toilets no lights but whitey is on the moon I wonder why he's uppin' me? cause whitey is on the moon well I was givin' him 50 dollars a week and now whitey is on the moon

—John Coltrane "Whitey on the Moon"

During the Age of Discovery, Spain, Portugal, France, Holland and England explored, developed overseas colonies and their economies prospered. The stay-at-home nations of China, Japan, Germany, Turkey, Russia and Italy were temporarily left behind by history. The non-explorer societies missed out on important opportunities. By the time these other European and Asian powers caught up and developed their navies, Spain and Great Britain were well on the way toward domination of the oceans. Almost 300 years and numerous wars later, by the 1800s, the sun never set on the British Empire.[1]

The United States has developed a space program that surpassed the initial successes of the former Soviet Union. Today there is indecision and questions about our country's will to go forward into the frontiers of outer space. The failure of a second space shuttle has given politicians and critics of NASA the opportunity to question public spending on space exploration. Clearly space exploration is perceived as very expensive with little return. This perception is misguided.

Many benefits have come from space exploration. The technological spin-offs have been numerous and diverse. We have much better medicine and medical devices because of the research necessary to make the short journey to space successful.

Today we measure blood pressure instantly because of the Mercury scientists' need to protect Alan Shepard during blast off.[2] We have scratch-resistant lens for eye glasses because of NASA's need to protect satellites from space debris.[4] Braces for teeth fit easier because of Nitinol, an alloy used to make satellite deployment easier.[5] Electronic pain-control devices implanted in patients were born from space program telemetry.[6] The patient can control the pain because of the miniature electronic components developed from the space program.[7] Heart pacemakers developed in part from the electronic monitoring used to operate satellites in earth orbit.[8] The implantable insulin pump borrowed technology from the robot arm on the first Mars Voyager probe.[9]

The view from space has resulted in tremendous new knowledge about the Earth below. Topography maps have made navigation easier and safer and we have developed new sciences. Virtually all of us use Google Earth and Maps daily.

From studies on the greenhouse gases that affect global climate change to assisting archaeologists with burial sites, scientific observations and mapping of the rain forests, space exploration has been tremendously useful in expanding the boundaries of human knowledge. Weather and communications satellites have made our lives more comfortable and the world a smaller place. The result is we can talk by phone to our loved ones on the other side of the planet on vacation in Bali, Indonesia, or get their flight schedule while they wait to board an airline in Sydney, Australia. We can use video-conference technology to communicate with friends and family thousands of miles apart. We can ask our phones for driving directions to get to a public gathering. These benefits are the spinoffs from space exploration.

Some scholars argue that exploration is a natural event that is an intricate part of human existence. Exploration is best explained in the social sciences and not as a list of business and medical benefits that naturally flow from discovery. Some scholars have argued that failing to continue with human exploration would lead to the demise of human civilization. Today our world view differs from that of people who lived in the 1800s. We can actually picture the Earth and most of us see the planet as a small globe in a sea of darkness, we have become so familiar with the images from the shuttle missions to outer space.

Humans are frustrated, aggressive mammals. We have perfected the art of war and practice of killing. Left on this planet to our own devices, we will destroy the Earth and all of God's creation. What re-directing the immense human energy away from the planet toward outer space will accomplish is we will be less inclined to commit total and complete genocide of all living things. We use war as an instrument of policy to carry out politics regardless of the wishes of the mass of humanity.

Space exploration is more difficult than anything we have ever tried to accomplish in all of our previous ventures into the unknown. While there are not space monsters that will swallow up our spaceships, there will be real dangers of which we are well aware. When Europeans ventured forth to colonize following the explorers who had gone before them, the difficult part had already taken place. Colonization followed exploration.

We are frightened away from building a moon base and landing on Mars not because we can't, but because it is exceptionally difficult, and we know it. We have the technology, but we know there are not rivers leading to exotic tropical paradise with waterfalls and pools full of fish surrounded by lush green plants. The moon is a barren rock devoid of all life and of questionable mineral value. The criticism that it is difficult to justify spending the billions of dollars required to develop a moon base when the money could be better spent on Earth is inaccurate.

The money for space exploration is spent here on Earth. The hardware, infrastructure, resources and science to build these facilities take place on land. What goes into space is the finished product. The end result is the spaceship just as the car that leaves the factory is what was bought and driven. The factory itself goes nowhere but continues to employ workers and generate jobs and economic activity.

Money is not better spent on other defense projects. We waste hundreds of billions of dollars on weapons systems of questionable utility and keep bases open that are politically connected. Building a moon base will refine many of the medical, computer and propulsion technologies and make our journeys to the inner solar system easier. Just having such powerful militaries makes their use tempting to carry out goals of politics through war. If the United States could not invade another country in violation of international law, we would not do it.

Instead of invading countries in this century the better approach is to incorporate these developing economies into a much larger international space program. Several benefits will have long-term positive impact on humanity. The technology transfer will accelerate economic development in the belt near the equator where immigration pressures exist. Workers with good jobs and stable societies don't emigrate.

As I was flying to Portugal after a wheelchair distribution to the island nation of Sao Tome where my Portuguese ancestors processed slaves before shipping them to Brazil and the Caribbean, I was amazed. I was flying at 37,000 feet above the earth where my ancestors were on these flimsy little wooden ships braving the unknown. My

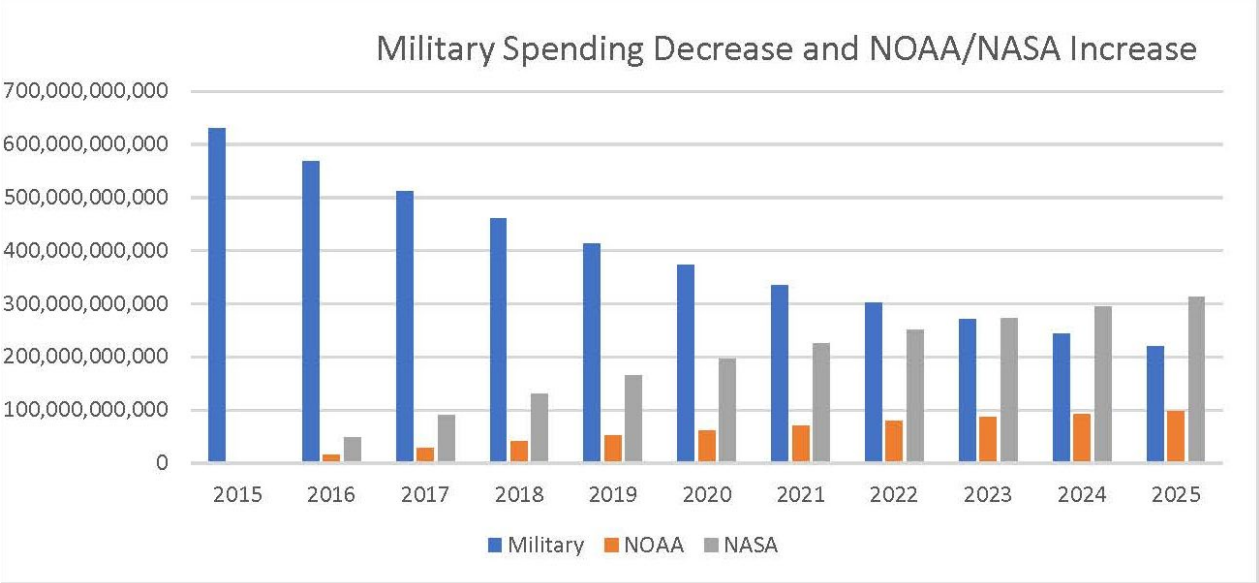
flight home was five hours late. The island is still as beautiful as when my ancestors first discovered it. Now it is crowded with over 200,000 people. There is a modern airport, roads, electricity and the Internet. The U.S. Navy painted the schools and built a security fence for the airport.

Had my Portuguese and Spanish ancestors not been brave, would I be flying in this Airbus above the earth looking down at these land areas? We have different skin colors, but are all God's children. Would America exist if our ancestors were not brave enough to venture forth into the unknown? Would we have international jet travel? What would life be like if people stopped being brave? If we just gave up on exploration 500 years ago or the plagues that are part of human history?

By slowly shifting defense spending to space and ocean exploration using the same contractors and congressional districts, we can keep people employed nationally and get the benefits that will come about from the push forward with discovery. Our present defense budget cannot be cut because it is easy political spending but ineffective in solving global environmental problems.

Freezing the defense budget at its current level and giving the mission of ocean and space exploration to the Department of Defense will enable the aerospace contractors and navy contractors to continue to employ people and protect our international interests. Prior to the pandemic, these programs of building a sustainable space station, a moon base and a manned mission to Mars are not that expensive when compared to total consumer spending and other budget items. Can you imagine how much it will cost humanity if we have a global war between Islam and the West, as is the goal of ISIS? Then exploring the oceans and Mars looks rather cheap.

This change in direction from the military-industrial complex to a space-ocean-exploration-development complex can be accomplished: If the United States re-directs defense spending by ten percent annually toward space and ocean exploration, in five years we can demilitarize the economy and create millions of jobs. The United States will still have the largest defense budget on the planet. It will also have entire new and much-needed industries that will give young people hope of great employment and adventure.



We owe it to future generations to protect a planet where the fish stocks have not become extinct and exciting employment opportunities exist. Humanity needs a change of direction from massive defense spending building the weapons of the last century and eating factory farmed foods. Change will occur. We can react to events or have the foresight of Thomas Jefferson and look far into the future. All that is required is courage and vision.

Public attitudes toward space exploration have changed. Vladimir Surdin, senior fellow at the Sternberg State Astronomical Institute observes:

> “Most people in developed countries no longer feel the same patriotic excitement over manned space flights that people used to feel in 1960s and 1970s, with the possible exception of China. Today, being a cosmonaut is an extreme and dangerous profession. It is similar to being a soldier, test pilot, deep-sea submersible pilot, mountain climber and so on. The overall trend in all these professions is to keep people out of danger. Submersible robots and unmanned aerial vehicles, tanks and military machines - they are cheaper and more reliable, "[10]

According to Surdin, humans cannot compete with robots in space. For example, NASA's Mars rover, Opportunity, has been on the red planet for over seven years. The robotic spacecraft Odyssey has been orbiting the planet for a decade, and Voyager spacecraft have been in use for over three decades. "The data-to-cost ratio of these spacecraft is hundreds of times greater than that of manned space missions," the scientist noted. The effects of space conditions on the human body have been studied over the past 50 years, leading Surdin to ask: "Why continue spending huge amounts of money looking into minor details if it is already clear that a manned flight to the Moon is possible while a manned flight to Mars is almost impossible?"[11]

The pandemic, our environmental and economic problems facing mankind are more important than any political party. These problems need to be addressed by all democracies. As humans, we have more in common than our limited religious and political differences. We all have a shared interest in survival. At this point in our brief history, it is either work together or die. The viruses do not have political loyalties and are neutral when it comes to religion.

Chapter Fifteen

New Kids on the Block

"We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win."

— President John F. Kennedy

There is one clear advantage a modern capitalist system has over other economic systems: innovation. We create more new inventions, file more patents, develop more entire new markets than any society in human history. New markets are created with risk. Entrepreneurial genius Steve Jobs pushed the limits of new frontiers with Apple Computer and the smartphone, iPod and the changes that resulted in consumer habits. Now billions of people are tied to the Internet with their phones and computers. The world today is unlike that of our grandparents. In many areas it is just better. We use indoor toilets, take hot showers, watch flat-screen televisions, have incredible music available and access world-class medical care — provided we live in a developed country in the European Union or the United States and Canada.

Today our planet has more people than ever before. The upside of more people and a larger gene pool is there are more talented individuals like Steve Jobs, Elon Musk, James Cameron, Paul Allen, Bill Gates, Olga Kern, Neil deGrasse Tyson and millions of others. There is incredible technology. The downside is there are over 7.8 billion people. There is no one religious book or scientific manual or political or economic plan for humanity. Human society is like a car traveling at maximum speed with no lights on, no driver and no idea where we are going. In the United States the nearest we come to a social plan is the ethos of conspicuous consumption. What's next for humanity and the planet? Is a third and final attempt at mass suicide that will bring about the "end of times" and the "apocalypse" humanity's fate? The future is unknown. But there are some very intelligent people who think humanity and life on the planet has a future.

Steve Jobs has passed on but other bright men and women have picked up his mantle of creativity. There are some very exciting companies out there pursuing the new frontiers of space and ocean exploration. SpaceX has a man of equal genius, Elon Musk. Their goal is ambitious. In their words, "SpaceX designs, manufactures and launches advanced rockets and spacecraft. The company was founded in 2002 to revolutionize space technology, with the ultimate goal of enabling people to live on other planets."[1] With over 3,000 employees and growing, Dr. Musk understands that making space flight affordable will require creating reusable vehicles. He hopes to bring down the cost of taking objects to outer space to $10 per pound.[2]

Space X has made substantial breakthroughs in almost every area of lowering costs. The space shuttle was very expensive. “We’ve made substantial breakthroughs in the design of the structure, the avionics, the engines and the launch operations.”

“We view our primary competitors in the long term as China in particularity and Russia and there is no enforceability of patents against those countries.”[3] His company is already profitable. He sees Mars as the only realistic option for human exploration. He looks at having a fully reusable rocket system, “then you are just down to the cost of the propellant.” He seeks to make space travel to Mars at a cost of $500,000 per person. “Could a middle-class person sell all of their stuff and move to Mars if they wanted to? I think that is the threshold for making human life interplanetary.” He is confident that price can be achieved in the long term. Given his successes with PayPal, SolarCity, Tesla and the need to reduce costs for space travel, I would not bet against him. He thinks it can be done within ten years. His firm is hiring engineers. Mars can be done and he believes “we can eventually make Mars like Earth”[4]. This company is exciting.

“I think the most important thing is to preserve the future of humanity and that we have done everything we can to ensure that human civilization will last as long as possible. I think that is the sensible thing to do and the longer we last the more we will learn and the more we will discover. I am most concerned about insuring the longevity of humanity. I think there are some people out there who seem as though they don’t like humanity and that humans are a blight on the surface of the earth and certainly humanity has done some terrible things. I think on balance humanity has done some wonderful things, I personally love humanity and we should attempt to do everything to preserve life as we know it.”[5]

NASA is his biggest customer. “I think there is always going to be a very important role for NASA and other space agencies around the world. Space exploration will always be a government-private joint endeavor, I think. I think over time it will be majority private, but government will always have a significant role to play as it does in the rest of the economy.[6]”

Mr. Musk is not the only successful entrepreneur with space ambitions. Jeff Bezos of Amazon fame from an early age has been interested in space exploration and tourism and planetary defense from asteroids. His company Blue Origin has done impressive work on reusable launch vehicles. Now they are teaming up with other companies and winning contracts from NASA and the U.S. Air Force.

> “A profile published in 2013 described a 1982 Miami Herald interview Bezos gave after he was named valedictorian of his high school class. The 18-year-old Bezos "said he wanted to build space hotels, amusement parks and colonies for 2 million or 3 million people who would be in orbit. 'The whole idea is to preserve the earth,' he told the newspaper .... The goal was to be able to evacuate humans. The planet would become a park.”[7]

Humanity will survive because of the efforts of Elon Musk, Richard Branson, Robert Bigelow, Jeff Bezos and others. These pioneers see the much larger picture. It is not just space tourism and launch services these individuals are seeking to achieve with their commercial ventures. They have plenty of money. A billionaire can spend over $1 million per year for 1,000 years and not run out of money. These concerned individuals are out to save the planet from complete destruction. *What they are pursuing is a new direction for mankind.*

They understand that if humanity is to survive, we MUST explore the inner solar system and preserve the fish stocks. They are pioneers in their fields, not politicians who set public policy. The combined value of the private companies engaged in space exploration does not even come close to the cost of the missile defense system, at over $250 billion[8]. The joint strike fighter program costs over $396 billion and the operational costs are even higher.[9]

Criticism leveled at them that their space exploration efforts are being pursued for ego is misguided. See "The Billionaire Space Club" by Charles Seife:

> "It's an old trick. Multimillionaires regularly try to spin acts of crass ego gratification as selfless philanthropy, no matter how obviously self-serving. They jump out of balloons at the edge of the atmosphere, take submarines to the bottom of the ocean, or shoot endangered animals on safari, all in the name of science and exploration. The more recent trend is billionaires making fleets of rocket ships for private space exploration. What makes this one different is that the public actually seems to buy the farce. Space buffs everywhere are acting as if everyone in the world will somehow be enriched when Lady Gaga is finally able to sip pink Cristal in zero gravity. Call it the trickle-down theory of space exploration: Somehow, building a luxury-liner suborbital rocket ship for the amusement of the ultrarich, ultra-famous, and ultra-board will be a great victory for all of humanity."[10]

Self-aggrandizement is not why these world-class businessmen want space tourism, to explore Mars and the inner solar system. They want the public to become excited again about space exploration. Richard Branson, Elon Musk, Jeff Bezos and others understand the hard data and want huge changes in global policy. They are trying to save civilization from disaster and a certain collision course with mass extinction of all species. They are leading the way by creating entire new industries.

Elon Musk' vision of Mars colonies is shared by many scientists and space enthusiasts. But despite his immense talent and enthusiasm, it is doubtful that exploration and colonization of Mars can be accomplished by private entrepreneurs. Exploring and eventually colonizing Mars must be a global effort involving several nations. This endeavor is too great to be accomplished by private industry. Even billionaires have their limits. Musk's plan for Mars is intriguing but not feasible. According to Space.com:

> “Elon Musk, the billionaire founder and CEO of the private spaceflight company SpaceX, wants to help establish a Mars colony of up to 80,000 people by ferrying explorers to the Red Planet for perhaps $500,000 a trip. In Musk's vision, the ambitious Mars settlement program would start with a pioneering group of fewer than 10 people, who would journey to the Red Planet aboard a huge reusable rocket powered by liquid oxygen and methane. "At Mars, you can start a self-sustaining civilization and grow it into something really big," Musk told an audience at the Royal Aeronautical Society in London on Friday (Nov. 16). Musk was there to talk about his business plans, and to receive the Society’s gold medal for his contribution to the commercialization of space.[11]

The cost of a successful trip to Mars will be like every other human adventure. It will be planned by humans and eventually accomplished despite great danger, loss of life and material. The dollar cost has been estimated on the low side at $6 billion to a high side estimate of over $500 billion.[12] One man who has been in the game the longest is Robert Zubrin, founder of the Mars Society. He envisions using materials already on Mars to reduce costs.

Dr. Zubrin’s life work is pushing forth humanity’s exploration of the Red Planet. His classic book, “The Case for Mars” lays out exactly how using existing technology, we can go further than humans have gone before. But O. Glenn Smith, former manager of shuttles systems engineering at NASA’s Johnson Space Center, and Paul D. Spudis, staff scientist at the Lunar and Planetary Institute in Houston, critics of human exploration of Mars, estimate the cost of landing humans on Mars at over $1.5 trillion.[13]

Dr. Zubrin’ response to critics who say exploring Mars is too expensive is:

> To get a grasp of how absurd these estimates are, one need point only out that current and recent NASA budgets have been around $18 billion, including a human spaceflight budget of about $4 billion. So, what Smith and Spudis are claiming is that sending nine flights to Mars would cost NASA’s full budget for the next 80 years, or the entirety of its human spaceflight budget for 375 years.
>
> Nothing of the sort is necessary. Sending humans to Mars does not involve building fantastical, enormous interplanetary spaceships. Rather, it requires three flight elements of about 100 metric tons mass, comprising 30 tons of payload and 70 tons of trans-Mars propulsion, each of which could be delivered to orbit by two SpaceX Falcon Heavy rockets or one augmented NASA Space Launch System booster.”[14]

There are as many cost estimates on what it will take to land humans on Mars as there are nations, organizations and individuals interested in this important endeavor. Different conferences come up with new cost estimates. Technology changes and costs come down as we find new and less expensive ways to achieve our goals. This is normal human progress and technological change. One panel of experts concluded

$100 billion and 20 years could get us there. They seek to burst the myth of $1 trillion as the cost of making humans an interplanetary species.

> Sending astronauts to Mars could be done at a small fraction of the cost of developing and flying the F-35 fighter jet, according to a rough estimate put forward by a panel of NASA, industry, and academic experts. While a two-decade campaign to prepare a manned mission to Mars would be expensive, it would cost nothing close to the $1 trillion figure sometimes cited, the panel concluded. Instead the mission could be funded out of the current NASA budget, with allowances for inflation, along with contributions from other countries.
>
> One goal has been to destroy that '$1 trillion to send a human to Mars' myth, and we have," said Chris Carberry, executive director of the nonprofit ExploreMars group. It's feasible, it's affordable, and it can be done without impacting the federal budget or the NASA budget," he said. "This message is getting across, and there's more support now in Congress and the public for [sending] humans to Mars than ever before."[15]

The challenges of a Mars trip are unlike anything humans have ever undertaken. Besides having to take all life support systems, there is radiation and a long flight without the possibility of rescue if something goes wrong. Every American administration advocate exploration and colonization of Mars. President Obama alluded to Americans landing on Mars by 2030 in his 2015 State of the Union address. The reality of life is the United States cannot afford to pursue a manned mission to Mars given the cost involved and the current state of our space program. It can be done if defense spending is re-directed toward space and ocean exploration. As Marc Kaufman points out in his National Geographic piece on landing humans on Mars:

> “Sending astronauts to Mars could be done at a small fraction of the cost of developing and flying the F-35 fighter jet, according to a rough estimate put forward by a panel of NASA, industry, and academic experts. ”[16]

Great new companies like SpaceX and Virgin Atlantic will one day have the capability to take humans from lower earth orbit to space hotels. But that is a far stretch from a successful round trip to the hostile Red planet. The Red planet must be explored by robots in the short run, until the transportation systems improve, and the time required to get to Mars is reduced dramatically.

The costs of this exploration can be absorbed by several nations working together. Between the United States, Russia, the European Union, China, Japan, India and Brazil, the resources exist not only to explore Mars but to colonize it. This must be pursued as a “human” expedition to Mars and beyond. Given the global problems on this planet, a human expedition to Mars will build unity among competitive nations and foster much-needed international cooperation.

What will reduce costs of launches to earth orbit is for space-capable nations and private entrepreneurs to build their launch facilities near the equator. Some of these countries have very good infrastructure and talented work forces like Kigali, Rwanda, and Cuzco, Peru. India has a rocket launch site at the Thumba Equatorial Rocket Launching Station (TERLS). The TERLS launch site is operated by the Indian Space Research Organization. It is located very close to earth's magnetic equator.[17]

Again, transferring technology to Africa and South America and the creation of high-tech jobs and infrastructure will accomplish several very important human objectives: lower population growth by increasing education, increase economic activity and lessen immigration pressures. Rwanda has an excellent university, improving infrastructure, transparency in government, an intelligent workforce and a stable government. People there are tri-lingual in English, French and Rwandan. Situated being high above sea level and near the equator, this small country is ideally suited for a spaceport. They have a very good international airport and Tanzania next door borders the ocean and has a large port at Dar El Salem. The added advantage for these private space entrepreneurs is their money will go much farther in the developing world. The scientific talent that can be developed or, in the case of India, already exists but at far lower costs.

Rwanda is only one of two places on earth where people can safely go on an ecotourism journey and see mountain gorillas. The Rwandan government works hard to protect these endangered beautiful creatures. The cost of a permit was about $500 when I visited that beautiful country in 2011. The country has amazing beauty and very intelligent people. With their location near the equator and at one of the highest altitudes and home to an ambitious work force, this country will soon become the Switzerland of Africa. They are the model on how to overcome genocide and adversity. A spaceport built by private industry with cooperation from NASA, the Russians, Chinese and

European and the Indian space programs will do wonders in helping technology transfers to a fast-developing Africa. Everyone interested in travel should visit this wonderful country. It is clean, beautiful and the people are very friendly.

The Incas were among the most highly developed and civilized society in the Americas before their destruction by my ruthless Spanish ancestors. Peru's capital city, Cusco, is near the equator but at 10,800 feet. The high altitude, extensive infrastructure, highly developed tourist accommodations and excellent universities make this country ideal for a space launch site in conjunction with Ecuador next door.

In Peru or next door in Quito, Ecuador, sites are ideally suited to launch vehicles into earth orbit. Brazil is next door and their neighbors have an active space program, Agencia Espacial Brasileira. Initially Brazil worked with the United States, but when technology transfers proved difficult, they expanded and worked with Russia, China, India and the Ukraine. Their launch site is the closest of all space ports to the Equator. Brazil became the first Portuguese-speaking nation to partner with the International Space Station. One of their astronauts, Marcos Pontes, was trained in the United States and Russia. He did scientific experiments for his country and continues to train for his next mission.[18]

The Europeans have a launch site in French Guiana, the Centre Spatial Guanais. This is a French and European spaceport near Kourou.[19] Its proximity to the Equator makes it particularly suitable for a space port. The spinning of the earth provides extra velocity to the rockets when launched eastward. What creating space centers in South America, Africa and Asia does is it pushes technology south and lessens immigration pressures of people wanting to go north for jobs and new industries.

Japan has an active space program built on a lean, shoestring budget and is intimately involved in the peaceful development of space.[20] One of the most technologically advanced nations on the planet, Japan could build nuclear weapons complete with ICBMs. Their astronauts have served missions on the International Space Station. Japan works closely with the United States in launching communication satellites into orbit and their companies provide parts for various space missions. Japan depends on the United States for military protection and works closely with us to keep the peace. As Kate Wilkinson observed in a piece on Asian space exploration:

> "Although economic and fiscal hurdles exist, the budget is not the biggest problem. Japan has already developed a world-class space industry on a shoestring. Its estimated official space budget averages less than $4 billion a year, which puts it at roughly half the budget of something like the U.S. National Science Foundation. It is difficult not to be impressed by what the country has achieved thus far. Measure for measure, the development of Japan's space technologies may be among the most, if not the most, efficient in terms of cost-effectiveness. The problem is also not pacifist constitutional constraints that appeared to urge the use of space for exclusively peaceful purposes, as this concept was at last clarified through Japan's Basic Space Law in 2008. The biggest limiting factor for Japan will probably be human capital, as the Japanese cadre of scientists and engineers that constitute the space workforce diminish further in the face of demographic challenges. The estimated space workforce for Japan today is roughly 6,500 workers, in comparison to China's 50,000. One virtue of the small satellite development efforts in Japan is that spreading this

work into universities and other institutes helps to cultivate younger engineering and scientific talents."[21]

Iran has a small space program and has successfully launched satellites into orbit. It is one of the founding members of the United Nations Committee on the Peaceful Uses of Outer Space.[22] Despite the current push for war with the Persians, we can only hope that enough sane minds will prevail. We will see.

Pakistan too is contacting the heavens.[23] With a nuclear power India next door, the Pakistanis are working hard to develop their own launch capabilities. North Korea has a variety of rockets and nuclear weapons to protect their hermit kingdom.[24] Will these programs be used to build a better world, or will they be used to deliver nuclear explosives to commit genocide?

What is surprising is the level of success countries have had with space exploration activities. Little know programs like those of Agenzia Spaziale Italiana operated a satellite launch facility off the coast of Kenya at San Marcos Island near the Equator. Italy was one founder of the European Space Agency and has worked with NASA on a variety of projects. Italy is ideally suited to expand the technology transfer to Africa. A launch site needs to be developed in central Africa because proximity to the equator is better for lessening the pressures of liftoff to lower earth orbit.[25]

The total budget of all of the world's space programs is quite small, probably less than $60 billion.[26] This is approximately the same amount spent on pet food in the United States, where 40 percent of Americans have at least one dog. Retail giant Walmart has annual revenues of over $480 billion.[27] The U.S. budget for national defense is approximately $1 trillion if you include all programs like the Department of Energy and Veterans Affairs, and the related costs of prior wars.[28]

Very little money is spent on space exploration by the United States and other nations. Some spending that involves the use of outer space is hidden from public view because it is contained within other budgets like defense, ocean exploration or other agencies.

What the new kids on the block like Elon Musk can do is expand SpaceX or similar companies and use the resources of the countries near the Equator to lessen their launch load costs to lower earth orbit. Over 52 countries have satellites in outer space and interest in space exploration.[29]

The innovation of small companies and entrepreneurs is probably the best hope for exploration of the cosmos and eventual terra-forming and colonization of Mars. The labor costs in Peru/Ecuador, Rwanda and Kenya, Brazil and Guiana and India will make rocketing from the Equator more economically feasible. Brazil and India have the added advantages of existing large manufacturing bases and large scientific and engineering pools.

Elon Musk almost went broke when the U.S. economy went under in 2008. He weathered the storm and SpaceX is a reality.[30] The new kids on the block are the best hope for saving human, plant and animal life on our small planet. Solar panels to lessen greenhouse gases, electric cars not dependent on fossil fuels, sustainable homes and commercial centers and co-existence with the environment are understood by world-class entrepreneurs and young people. The environmental challenges of this century will be met by brave entrepreneurs and young people who understand, “it’s the environment, stupid”. They have the courage of my Spanish and Portuguese ancestors who risked everything to achieve not just financial success but human progress.

> As the Space Foundation observes on its website,
> “Many nations now recognize the strategic value and practical benefits of space assets and are pursuing space capabilities. By the end of 2010, government, commercial or academic organizations in at least 52 nations — including 19 member states of ESA — were operating one or more satellites or planning to launch a satellite before the end of 2012. Some of those nations include: Argentina, Australia, Austria, Bolivia, Bulgaria, Chile, Colombia, Czech Republic, Denmark, Egypt, Greece, Indonesia, Kazakhstan, Laos, Luxembourg, Malaysia, Mexico, the Netherlands, Norway, Pakistan, Portugal, Romania, Saudi Arabia, Spain, South Africa, Sweden, Thailand, Turkey, Venezuela and Vietnam.”[31]

President Obama’s push to commercialize space and open it up to private industry was the most successful legacy of his presidency. "By the mid-2030s, I believe we can send people to orbit Mars and bring them safely back to Earth. Landing on Mars will follow, and "I expect to be around to see it."[32] The question of who lands on Mars first is for history to decide. As Hernan Cortez observed, “Victories are won by the valiant, not by numbers

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Chapter Sixteen

It’s Always Been Dangerous

“La victoria trova cento padri, a nessuno vuole riconoscere l'insuccesso”
— Count Gian Galeazzo Ciano (1903-1944)

Space exploration will be very dangerous for the foreseeable future. In the post-virus world, it will be almost impossible but doable. The Columbia shuttle disaster and the deaths of the seven brave astronauts reminded us of the danger of space exploration. The shuttle launches were so common we mistakenly believed they had become routine. They are not. The short journey to outer space on top of a controlled explosion at 17,500 miles per hour is never to be considered routine. Throughout history, exploration has been and will continue to be fraught with peril.

In previous centuries the dangers came from weather, people defending their homelands from the invading explorers, disease and sometimes mutiny. When Columbus came to this part of the planet, he and his small crew did not have to carry oxygen and life support systems. On Columbus’ fourth journey, a disaster occurred. A fleet of 30 ships was allowed to journey back to Spain despite Columbus’ warning of a hurricane.

> "Columbus made his fourth voyage from Spain to the Americas in 1502. He was such a sure navigator by then that the 3500-mile voyage took a mere 21 days. But he did not arrive happy. At Santo Domingo on June 29 Columbus requested entry into the harbor for his five ships, and he urged the governor to detain a 30-ship fleet ready to sail to Spain. He warned a terrible storm was brewing. The governor and his retinue mocked Columbus as a phony fortune-teller. Not only did the governor order the fleet to sail but denied Columbus entry into the harbor.
>
> "May God take you!' fumed Columbus. That was always his strongest curse. Once again Columbus was thwarted by dull, proud people. He was no gypsy fortune-teller but the sea captain supreme. The mix of oily swells from the southeast, abnormal tide, heaviness in the air, aching arthritis, wispy cirrus

> clouds streaming high overhead, and a magnificent crimson sunset meant only one thing: a savage hurricane was coming from the north or east! Denied the harbor, Columbus anchored his ships off the southwest shore of the island with protection from north and west. If anchors broke loose the winds would drive them out to sea, not into shore. The 30 ships of the fleet sailed east, then north through the Mona Passage. Barely underway into the Atlantic the gold-laden fleet was hammered by ferocious winds. Within hours 20 ships sank with all hands. Nine others were driven ashore and battered to bits. One ship of the fleet survived. A fortune in gold, 29 ships and 500 men were lost. [1]

Despite this colossal setback, Spanish exploration of the planet continued. The return on investment was not immediate. Sometimes the only thing we get from exploration is more knowledge of what not to do. A careful review of previous explorations reveals that many, if not most failed. The successes are well known but like life, when we fail, we are often forgotten. After Columbus, explorers and adventurers set forth to the new world. The successful expeditions and conquests of Francisco Pizarro and Hernando de Cortez are required high school history.

The failed expeditions, where lives were lost and no gold or silver was discovered, are not as publicized. Some have landmarks named after them. But humans have short memories. Hudson Bay, named after the failed voyager Henry Hudson, is a classic example.

> Henry Hudson was an Englishman and accomplished navigator and sailor. It is unknown where and when he was born, but his four ocean voyages put his name on several places on the global map.
>
> He set sail on his fourth journey from England on April 17, 1610 and headed northwest. The journey was fraught with hardships and threats of mutiny. The weather was foul and the seas icy. The ship, the *Discovery*, made its way through an icy passage known today as the Hudson Strait. (The strait is 450 miles of water separating northern Labrador from Baffin Island.) In August, he sighted a huge body of water he mistakenly assumed was the Pacific Ocean. This body of water was in fact a large bay later named the Hudson Bay. While exploring, the bay became very icy (it is ice nine months of the year). By November, the ship was frozen in. With dwindling food supplies, Hudson's crew grew increasingly angry, ill, and frozen. Mutiny was on every crew member's mind. When the ship was freed by melting ice, Hudson opted to continue sailing westward. By June 1611, the crew did mutiny. They forced Hudson, his son, and sick and loyal sailors in a small boat. They were never heard from again. Only a handful of sailors made it back to England aboard the *Discovery*. They were not punished for the mutiny.[2]

What Hudson’s voyage accomplished was the knowledge that the Northwest Passage to the Orient would not be possible because of ice from the Arctic. Many explorers have been forgotten having drowned or become lost, eaten by wild animals or

killed by locals protecting their homeland. Among the forgotten was Portuguese explorer João Fernandes Lavrador.

> “A small landowner (lavrador) on the island of Terceira in the Azores. The details of his life and voyages are vague and uncertain, but it is known that he had business connections with the port of Bristol, that he was given a royal patent in 1499, and that he made one or more voyages to the New World. It is possible that in 1500 he reached what we know as Greenland, and called it Tiera del Lavrador. The name later migrated south to what is now called Labrador. Fernandes then joined a Bristol syndicate, and it is thought that he was lost on a voyage to America in 1501.”[3]

He joins numerous souls lost on a voyage to America. Gaspar Corte-Real was given a royal charter in 1500 by the Portuguese to explore Newfoundland. But the venture was a disaster.

> “Gaspar sailed to Terra Verde again in 1501, with three caravels. Again, there has been much speculation about his route. He encountered ice, sailed south and found a more temperate land which some locate in Labrador, others — more plausibly — in eastern Newfoundland. The expedition captured about 60 aboriginal people as slaves who were said to "resemble gypsies in colour, features, stature and aspect; are clothed in the skins of various animals ...They are very shy and gentle, but well formed in arms and legs and shoulders beyond description ...." Only the captives reached Portugal. The others drowned, with Gaspar, on the return voyage. Gaspar's brother, Miguel Corte-Real, went to look for him in 1502, but also failed to return.”[4]

Explorer John Davis sailed south along the Labrador coast in 1586 — two of his men were killed by Inuit. John Knight was forced onto the Labrador coast by ice in 1606, where he and three crew members disappeared.[5]

Even if the explorer succeeded, he sometimes met his fate at the hands of the perturbed local population. James Cook sailed the world for England in some of the most exciting adventures humans have ever recorded. He and his men had one adventure too many. According to Alistair MacLean:

> **“**Six days later, following a severe storm in which Cook's vessels were severely damaged, the vessels were obliged to return to Hawaii to effect repairs. This time their welcome was less than enthusiastic. There were numerous incidents of petty theft by the natives and when during the night of 13 February one of the ship's cutters was stolen, Cook felt obliged to take some retaliatory action. His custom, when confronted by such circumstances, was to take hostage some senior person in the native hierarchy and hold them until the stolen articles were returned. On the morning of the 14th, Cook went ashore accompanied by some marines to take King Kalaniopu hostage. A party arrived at the King's hut and he agreed to accompany them back to the ship. When they arrived at the beach a

large, unruly crowd numbering in the thousands surrounded Cook. Apparently at some point a shot was fired and in the ensuing uproar Cook was clubbed to the ground and repeatedly stabbed by native spears. His body was taken on board his ship and was buried at sea on 22 February, 1779.[6]

After humans conquered the tops of the oceans on flimsy wooden ships and our very few land areas on our tiny planet, humanity's next journey is to space. This journey is far more challenging then fighting each other with sharp sticks and pieces of lead. When Hernan Cortez fought the Aztecs, he and his men and their numerous allies did not have to leave the Earth's orbit with their own oxygen, food and water in tiny spaceships to endure a weightless environment. Nothing humans have ever accomplished in previous explorations is as dangerous as space travel.

But persistence will overcome most of life's difficulties and, with careful planning, lead to success. In any endeavor, what separates the losers from the winners is picking yourself back up when you have been knocked down. Spain could simply have given up exploring and colonizing the new world after losing that fleet during Columbus' early explorations. Financial success did not come until Cortez and Pizarro brought back very large quantities of gold and silver.

The astronauts and cosmonauts who died trying to take humanity into outer space must be honored with more exploration. More astronauts and cosmonauts will die. There will be accidents and loss of life and expensive disasters. Three U.S. astronauts died in an Apollo cabin in 1967; four Soviet cosmonauts died in two accidents in 1967 and 1971; seven astronauts died in the space shuttle Challenger in 1986 and seven more died in the Columbia accident.[7] During launches the men and women about to head off to outer space are on top of what amounts to a high explosive with liquid and solid fuel. There will be more accidents and more loss of life. It will continue to be very dangerous. Throughout all of human history mankind's story has been one of death and expense in pursuit of exploration. The result has been humans have conquered the planet.

The next step forward is to land men on Mars and colonize that small planet. If America chooses not to go forward with this exploration and colonization, other nations have decided this is man's destiny. The Russians have asked China to be a partner in a moon base.[8] The Europeans with Russia's help, China, Japan and now India must be taken seriously as they strive to conquer outer space.

How long will it take to get the courage back up to begin exploration again? When you think about Europe after the pandemics of the Middle Ages, by the late 1400s, small wooden boats left Portugal and ventured down the coast of Africa. In 1488, Portuguese explorer Bartolomeu Dias was the first European to sail around the southern tip of Africa.[9]

Unlike any journey to Mars, Dias stopped along the way and pick up supplies. Despite not having to carry his own oxygen, food and deal with his own human waste

streams, he died on one of his journeys. Dias perished near the Cape of Good Hope he presciently named Cape of Storms. Four ships encountered a huge storm off the cape and were lost we think in May 1500.[10]

We don't really know when or where he died because going back 520 years and looking at records which might be accurate is problematic. A trip to Mars will make the explorations of the 1400s and over the next 300 years look like a walk in the park. Add a dangerous virus and you can only imagine what would happen if one of the crew members was an undetected carrier of a hidden disease.

PART IV
SOLVING OUR ENVIRONMENTAL PROBLEMS

Chapter Seventeen

Government Created Environmental and Economic Problems

"Often people with good intentions cause the most harm"
Francis D. Wormuth, Ph.D.

Prior to the pandemic, politicians knew they were poisoning the public and the planet. If we look closely, most global environmental, economic and human health problems, they have one cause- failed government policies. Why are 70 percent of Americans overweight, 50 percent obese and 40 percent morbidly obese?[1] America's horrible health is the direct result of our second-hand protein dead animal processed foods diet. There is no mystery here. The data is overwhelming. Politicians have the exact same data available to those of us in the environmental movement. They know what is going on and how to fix it. Killing animals for second hand protein through industrial agriculture is nothing short of criminal negligence. Politicians are greedy and corrupt but they are not stupid.

Diabetes is diet related. There are at least 450 drugs that are administered to animals prior to slaughtering them. Approximately 80 percent of all pharmaceutical antibiotics are for the animal agriculture industry.[2] These pharmaceutical drugs are pumped into caged and tortured animals. Then these poor defenseless creatures are slaughtered in very unsanitary conditions. As the public has become obese, millions suffer from diabetes. Today, over 34 million Americans have Type 2 diabetes.[3] Another 84 million Americans are pre-diabetic.[4] If our country continues down this poor diet path, millions more will likely get type 2 diabetes, heart disease and cancer. We don't know what the diet will be in the post virus world. It has to change.

America's horrible diet is very expensive. In March, 2018, the American Diabetes Association released the findings of their comprehensive study. The study concluded that diabetes and pre-diabetes was the most expensive chronic illness in America, costing over $416 billion annually.[5] Our diet is bankrupting the health care system.

The United States Congress knows full well what the agricultural industry is doing to public health. They don't care. Politicians receive campaign contributions and vote accordingly. What the voting public seems to forget, an honest politician is a person whom when bought, stays bought. In 2016 Agribusiness contributed over $120 million to politicians. These folks are responsible for public policy.[6] This was a cheap payoff given the return of billions of taxpayer dollars.

In 2019 the United States Department of Agriculture announced $16 billion in tax payer support for farmers.[7] Some of this was related to the ongoing trade war with China. These tax dollars are only the tip of the iceberg of corruption. These companies are selling unhealthy food and passing bad laws that are destroying public health.[8] The industry view is, "You the consumer should have the common sense to know these foods are bad for you."[9] Well with mass advertising, and outright lies, the public does

not know their food is causing their health problems. All of the major corporate lobbies are involved in our diet disaster. Look at the drug companies.

The pharmaceutical industry makes a huge amount of money in keeping people unhealthy. If you can keep people sick, you can keep selling them “drugs” forever. If a person is “cured”, they are no longer a customer. The strategy is to manipulate the symptoms, not deal with the underlying causes of poor health. In the U.S. treating heart disease, diabetes and cancer is a $1.5 trillion dollar industry.[10] These companies and Congress know they have major conflicts of interest. Bribes are profitable. The pharmaceutical industry, physicians and health professionals spend over $230 million in 2018 on lobbying politicians.[11] Look at the drug ads on television that are constantly being sold to the public as solutions rather than promoting a plant-based diet.

The United States Department of Agriculture promotes foods which they know cause diabetes, heart disease and cancer. Yet despite all of the scientific data, the USDA continues to promote meat, dairy and eggs. These products are literally shoved down the public’s throat with mass advertising. What the USDA does not do is promote a plant-based diet. There are no bribes for politicians from the plant-based food industry. Consequently, these safe foods are not promoted. The reality of life is, humans do not have to torture and kill animals to get protein.

As Dr. Milton Mills states emphatically in the documentary, What the Health, “all protein is made by plants…. It is not necessary to eat animal tissue to get protein.”[12] In fact, all of the strongest land animals are herbivores. Look at elephants, rhinos, mountain gorillas. They are huge and physically strong. Our intestines were not meant to process large amounts of meat. Yet despite the negative health effects of meat and dairy, these products are what the USDA promotes and tax dollars subsidy.

This lousy diet is at cross purposes with other government functions. The USDA promotes foods that make you sick. The sick taxpayer now becomes a burden for Health and Human Services and the Social Security Administration. These agencies pay hundreds of billions of dollars for the higher health care costs resulting from these frankenfoods promoted by the USDA.

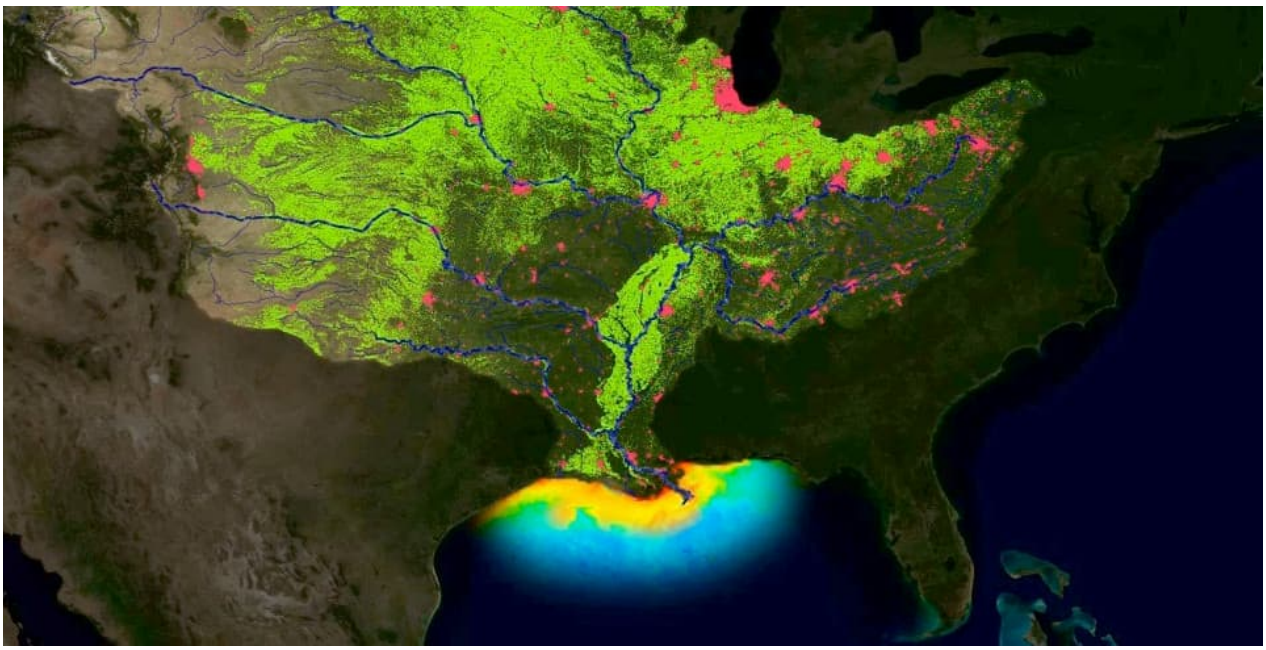
Public health is just one aspect of what our industrial agriculture and mass killing of animals is doing to the planet. Look at what corporate agriculture is doing to the environment. There is a massive dead zone off the coast of Louisiana where the Mississippi empties into the Gulf of Mexico. A dead zone is an area where hypoxia is occurring because pollution is depriving the water of oxygen.[13]

This dead zone is over 8,000 miles and its cause is industrial agriculture as well as the pollution from cities.[13] The overproduction of corn and using it to feed animals which in turn are used to feed humans is dumping huge amounts of nitrogen into the rivers. This in turn deprives water of oxygen and creates a dead zone where fish cannot survive. According to Scientific American, “Nitrogen and phosphorous from agricultural

runoff are the primary culprits, but sewage, vehicular and industrial emissions and even natural factors also play a role in the development of dead zones."[14]

The number of dead zones created by human activities like industrial agriculture, and pollution as well as sewage has increased all over the world to over 500.[15] Literally every river off every continent now have dead zones.

These dead zones destroy sea life. The good news is they can be reversed. We can clean up these dead zones by not dumping sewage, nitrogen and phosphorous from agricultural runoffs. In other words, we can change the diet from these huge industrial animal farms to plant-based diets and go further. As we change our cities and eliminate waste streams dumping into the rivers all over the world, the waters will be healthy. The fish, the plants, shrimp and other life will come back. The dead zones are the results of over 150 years of human activity that ignored the effects on the natural world.



Hypoxic zones are areas in the ocean where the oxygen concentration is so low that animals can suffocate and die, and as a result are often called "dead zones." The largest hypoxic zone in the United States, and the second largest hypoxic zone worldwide, forms in the northern Gulf of Mexico adjacent to the Mississippi River. This image from a NOAA Environmental Visualization Lab animation shows how runoff from farms (green areas) and cities (red areas) drains into the Mississippi. This runoff contains an overabundance of nutrients from fertilizers, wastewater treatment plants, and other sources. This nutrient pollution eventually ends up in the Gulf of Mexico, leading to the formation of hypoxic "dead zones."[16]

It was not always like this where humans and the environment were at odds. In the 1700s, prior to the European migration to the New World, the natural world on this part of the planet was very healthy and abundant with wildlife. The rivers were teeming

with fish. The oceans off the Atlantic were full of cod and every other type of fish. These were caught by the European settlers and shipped back to Europe.[17] The rivers and ocean were fished out like what happened in Europe.[18]

The forests were so thick it was said that a squirrel could travel for miles without touching the ground. Forests were the great resource. This led to the greatest destruction of forests in history. The ax became the symbol of American life. Millions of people lived on the north and south American continents. Pristine waters teeming with life and countless species existed prior to the European migration.[19]

The animal and plant resources seemed inexhaustible. But they were not. Again, government policies of not looking into the future and realizing the destruction of the forests, emptying the rivers of fish and destroying the fisheries off shore would lead eventually to what we have today- lands that are devoid of wildlife and dead zones from pollution. Time happens faster than we realize. In the 500 years since the migration from Europe to this side of the planet, the entire ecosystem has completely changed… for the worst. The kings and monarchs of the Europe did not have the foresight to realize that cutting down the forests, killing the fish in the rivers and overfishing the shores of the Atlantic would result in the environmental mess we have today. This is reasonable. We have no idea what human plant and animal life will be like 500 years from now. But we have to change the path we are on or our civilization will not survive. This requires us to change our agriculture and our diet. We have to change the infrastructure of agriculture.

Much has been written and numerous documentaries have been made about industrial farming and the effects on the environment. More than 150 BILLION animals are killed each year for human consumption.[20] The current agricultural model is plant corn and soy. Use fertilizers that are by products of the fossil fuel industry. Use the corn and soy to feed cattle, pigs and chickens. Feed these poor crowded animals antibiotics sold to farmers by huge pharmaceutical companies. Kill these animals in truly repulsive slaughter houses with unsanitary conditions. Ship these dead animals to giant supermarket chains like Kroger, Walmart and others and sell them to the public.

The results of this failed agricultural model are dead zones in the Gulf of Mexico, polluted land and air, 100 million Americans with pre-diabetes and type two diabetes, millions of cancer deaths, millions with heart disease, high blood pressure and an American population is high healthy.[21]

How did we get to where we are? Corruption can take many forms. Because politicians in the United States receive money to run for office, large pharmaceutical, fossil fuel, agricultural, finance, defense and other companies contribute millions to political campaigns.[22] In return these large institutions which are in all 435 congressional districts get billions of tax dollars. Prior to the Virus, this taxpayer money hired millions of workers. They spent their paychecks on these agricultural products that are saturated with what is in realty poisoned food. Then the workers get sick from the terrible diet and the pharmaceutical companies treat the symptoms instead of dealing

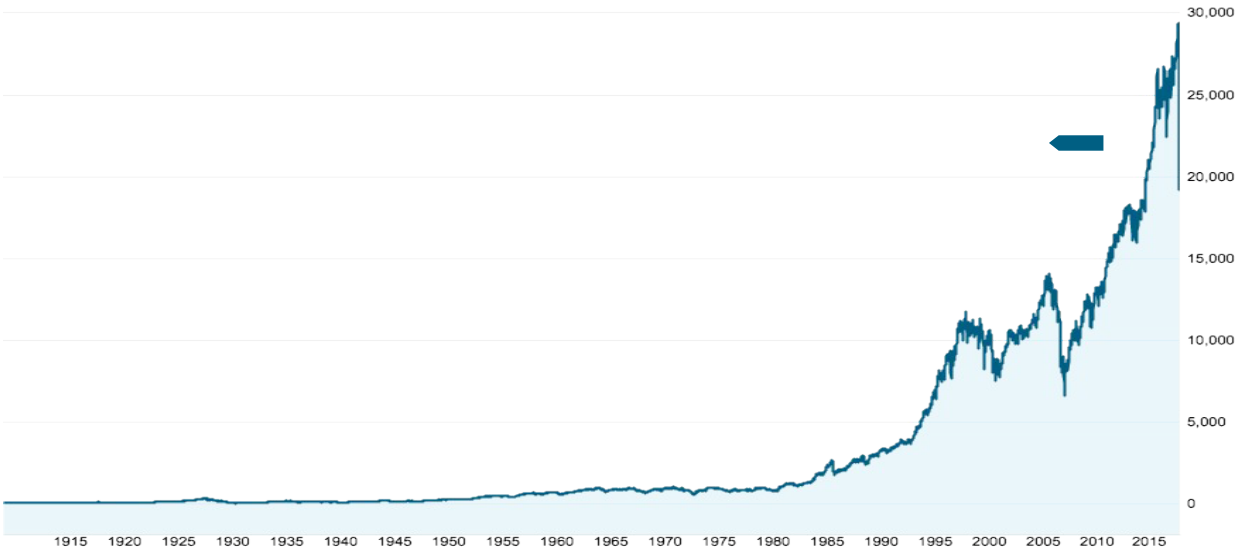
with the cause of the illness. The result of all of this corruption is a sick unemployed society and a damaged environment. We reaped what we sowed.

The campaign contributions did benefit one class of people. What happened over the last 40 years is quite clear. A massive transfer of wealth, most of it borrowed, was transferred from working and middle class people to a tiny handful of families. Today, approximately 300 individuals have more combined wealth than the bottom 3 Billion humans.[23] The data on wealth concentration is simply overwhelming.[24]

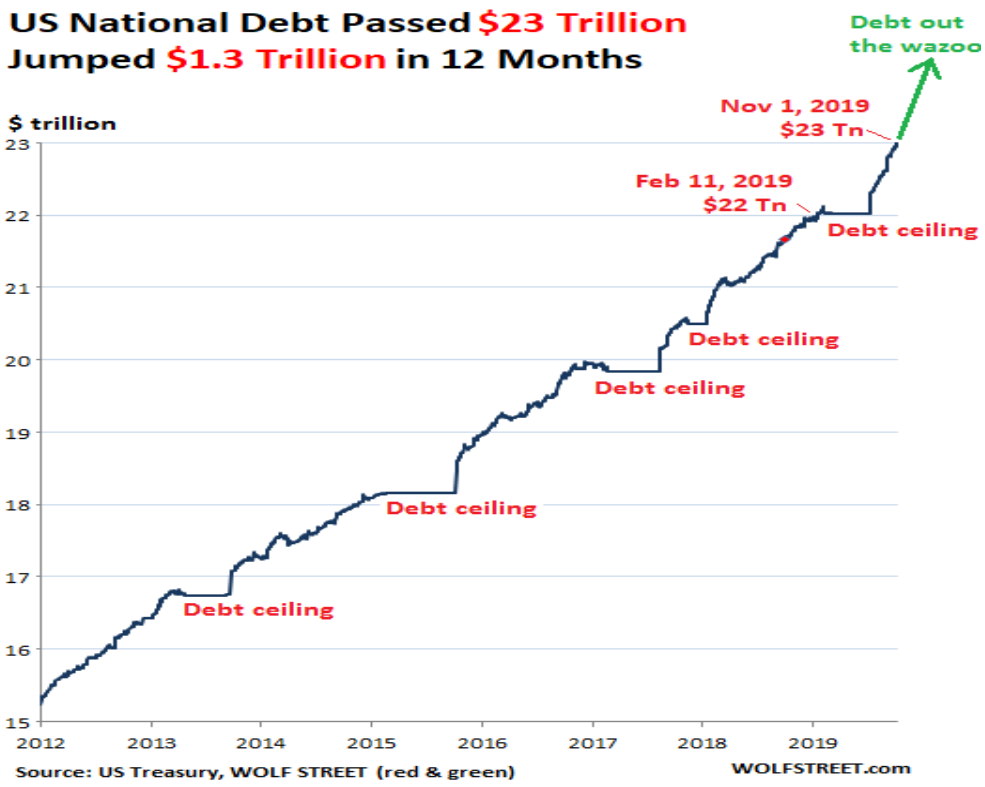
In the United States, what happened is really rather simple. The Property Party with its two wings, Republicans and Democrats cut taxes for people who are very rich, ran up a massive budget deficit and transferred the wealth to a small handful of politically powerful families. These very wealthy families in turn made campaign contributions to the same politicians who cut the taxes and borrowed money to make a small number of wealthy people richer than any social class in the history of the world.[25]

Now if you look at the national debt which went from near zero when Reagan was elected to today's unpayable $26 trillion, you can see what happened. Taxes were cut for the Super Rich under Reagan[26] at the same time the Federal budget deficit was increased. The ridiculous idea that was floated was "trickle-down economics" would result in a larger economy and more jobs. It was all a lie and everyone from both wings of the Property Party knew it. When Reagan left office, the national debt had tripled.[27]

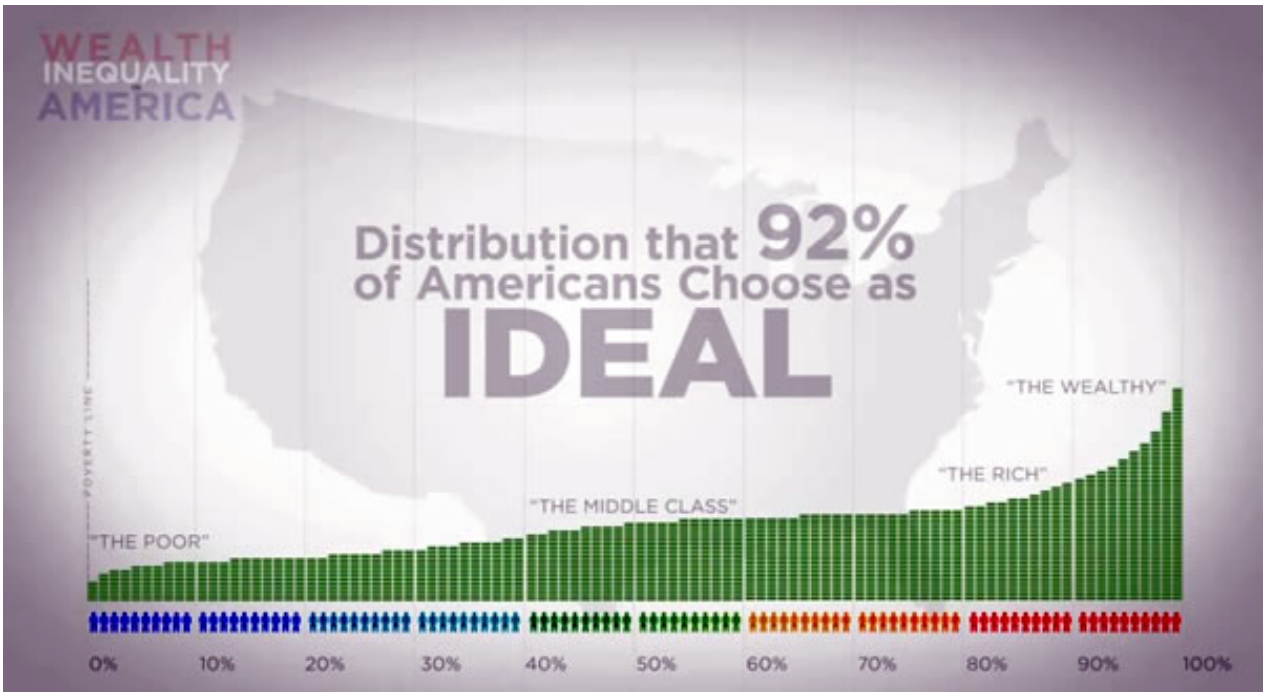
The workers ended up with less income as a proportion of the total national GDP and more income and assets continued to "trickle down" from the workers and small business people to the tiny handful of Super Rich. Taxes were cut again for the Super-Rich under Bush II[28] and most recently under Orange Mussolini, aka Trump.[29] Today, it no longer matters. The entire economic system has collapsed. Hundreds of millions of people all over the world are unemployed. We will be lucky to avoid starvation. The massive wealth of the Super Rich will not save them from the end of civilization. Greed is not good. They can either be part of the solution or die with the rest of us. Their massive greed is not going to protect them from viruses and social unrest from hundreds of millions of unemployed expendable workers. Without courts and banks, money is worthless.



The national debt now is over $26 trillion. The two wings of the Property Party, Republicans and Democrats, ran the Empire, Pax Americana right into the edge of bankruptcy.[30]



As you can see, a tiny handful of families own the majority of wealth of the United States. You can thank your Congress for this massive transfer of assets to the “rich”.



Jesus’ observation that, “the lust for money is truly the root of all evil” is one of the major flaws in human behavior. The greed of politicians was revealed in the Panama Papers.[31] The off-shore accounts of the rich and powerful exposed the obvious, national borders are no barrier to avoiding the long arm of taxes and the law. The proletariat does not have the luxury of moving large sums of money off shore. The simple reason is most workers are so poor they can barely afford toilet paper much less a plane ticket to Panama or some other off shore tax haven.

There is no possible way the climate crisis can be solved without changing the agriculture infrastructure. At least 15 percent of the greenhouse gases are released by the agriculture industry with the present slaughter of animals for second hand protein.[32]

The post virus world does not have to be the hell of Mad Max and an apocalyptic nightmare. Change is a constant. We have to deal with it, like it or not our wasteful way of life is over. It's time to change to a plant-based diet Shaun Monson advocated in 2005 when he warned everyone who would listen. The plant based agricultural model is still going to require labor, soil, sunshine and water. The same companies that created this environmental and public health disaster are able to produce healthy food.

Since the United States government is so corrupt they won't change the diet, just quit buying meat, chicken, pork and processed foods. If you don't buy milk and cheese products, they will rot on the shelves and these companies will stop selling them. YOU not your corrupt congressman or corporate executive are responsible for your health. The power lies in your wallet. If you want good health, eat a plant-based diet and exercise. It really is that simple. Demonizing immigrants who work as farm hands is not going to get us fed. It's time to move on.

Chapter Eighteen

Do Plants and Animals Have Souls?

"Murderers very often start out by killing and torturing animals as kids."
— Robert K. Ressler
FBI serial killer profiler

Do plants and animals have souls? This question is important. Had my Spanish ancestors initially believed that Indians were humans, they would not have been able to indiscriminately murder indigenous people. Eventually there was great religious debate in the Catholic Church over whether Indians had souls and were human. When after much intellectual discussion it was decided that Indians were human and had souls, the massive and indiscriminate murders were replaced with political domination in South and Central America. In Seneca Nation, John Mohawk wrote that:

"The Indians presented an interesting dilemma when a dispute between the clergy and the military arose around the identity of the Indians. Bartolome de las Casas, a priest, circulated accounts of Spanish cruelty which were published in Western Europe and eventually became a source of embarrassment to the Spanish crown. The crown then ordered a debate before the Council of the Indies to settle the question whether the American Indians were indeed human beings possessed of a soul, and therefore, rightfully the charges of the Holy Roman Catholic Church, or, as some conquistadors asserted, sub-humans who had no rights whatever. The conquistadors hired Gines de Sepulveda as their attorney. He argued forcefully that Indians are sub-humans. Las Casas argued they had souls and intelligence and can be socialized to be servants of both the crown and the church."[1]

If plants and animals have "souls" then humans cannot indiscriminately slaughter them. Like the indigenous people and later women and blacks, once people had "souls" they also had legal status and could not be treated as property. Plants and animals must be protected because they exist only on this tiny planet in our solar system. We need to not only protect plants and animals, we need to go a step further and terra-form Mars and take life to that lifeless planet. Besides protecting life here, we need to spread human, animal and plant life throughout our solar system. This quest to expand life to our lifeless solar system will create hundreds of millions of jobs, entire new industries and give hope to youths that their future matters.

Our great Earth Mother does not care what we tiny frail little humans believe. Our planet will survive regardless of temperature change. The species will adapt or die. That is evolution. What matters is a temperature range that allows survival of species we approve of as stewards of the planet. Temperature determines growing cycles and has a dramatic impact on food supplies. With higher water levels from a rising ocean, this will allow for the migration of disease that will kill off millions of people. Unchecked, global warming will have a profound effect on life on our small planet. Humans will not be the only creatures impacted from this massive climate change. According to "Global Warming, Early Warning Signs":

"Global temperature in 1998 was the hottest in the historical record, and the temperature increase over the 20th century is likely to be the highest of the past millennium. Global average temperatures have warmed about one-degree Fahrenheit (0.6°C) since 1900. The ten warmest years on record have occurred since 1987, seven of them since 1994."[2]

There are no whales, dolphins, mountain gorillas, rhinos, giant pandas, eagles, insects, banana trees or grapes on any of the planets in the inner solar system. Gorillas live in central Africa in a small land area surrounded on every side by more humans. They are our brothers and sisters and the closest relatives. Gorillas share 98.3% of their DNA with humans. This makes them our closest cousins after chimpanzees and bonobos. These charismatic, intelligent animals often surprise us with behaviors and emotions so similar to our human experience.[3]

There might be small life forms consisting of bacteria. But complex living beings like mountain lions or cobras exist only on Earth. Humans have been very successful in reproducing. Other animal species have not. Again, our environmental problems result from overpopulation. In a mere two hundred years, humans have increased from one billion to approximately eight billion.

As our population has exploded because of better agriculture, urbanization and improved medical practices, the numbers of the other creatures on our small planet has substantially decreased.

The Earth and the ecosystems, complex food chains and natural environments are perfect. There is a natural balance between predators and prey. The only imperfection is humans. Lions kill enough to eat and once full do not slaughter every last animal within their territories. Humans kill every last animal and plant in an ecosystem for short-term pleasure or comfort. If you go to a city, any city anywhere on Earth, there is an abundance of humans, but little else other than "pets" and favored plants.

Why do humans have so little respect for the plants and animals that exist only on this small planet? One explanation is theological. Under Western Christian thought, humans are at the peak of God's creation and the Earth is viewed as a resource to be exploited and utilized to man's sole advantage. It is this misguided view of Christ and the message of peace that has caused so much harm to nature.

White's insightful essay and Rachael Carson's Silent Spring started the intellectual framework for rethinking the effects of industrialization and modern technology and man's role in nature. There are limits to growth.

In The Historical Roots of Our Ecological Crisis, Lynn White, Jr. observes that:

> "I doubt that disastrous ecologic backlash can be avoided simply by applying to our problems more science and more technology. Our science and technology have grown out of Christian attitudes toward man's relation to nature that are almost universally held not only by Christians and neo-Christians but also by those who fondly regard themselves as post-Christians. Despite Copernicus, all the cosmos rotates around our little globe. Despite Darwin, we are not, in our hearts, part of the natural process. We are superior to nature, contemptuous of it, willing to use it for our slightest whim."
>
> [Ronald Reagan,] the newly elected Governor of California, like myself a churchman but less troubled than I, spoke for the Christian tradition when he said (as alleged), "when you've seen one redwood tree, you've seen them all." To a Christian a tree can be no more than a physical fact. The whole concept of the sacred grove is alien to Christianity and to the ethos of the West. For nearly two millennia Christian missionaries have been chopping down sacred groves, which are idolatrous because they assume spirit in nature. What we do about ecology depends on our ideas of the man-nature relationship. More science and more technology will not get us out of the present ecologic crisis until we find a new religion or rethink our old one.[4]

But it is not so much theology that has caused our present difficulties. A modern technological state and a healthy environment are compatible. It is over-

population, consumerism and conspicuous consumption that are at the heart of "environmental problems". The pressures on other species came about after the world's population added an extra six billion people in the last two hundred years. These extra six billion people have outgrown the ability of the Earth to provide the natural resources of fish stocks, wild sources of animal proteins like buffalo and elk or zebras. This is why we clear-cut forests, log in tropical jungles, kill wild cats, gorillas, whales and fish cod to near extinction. It is a reason we kill elephants for their tusks. If it comes down to the monkey eats or the human eats, the monkey will either starve or the human will eat the monkey. Hunger and greed destroy life.

Respect for nature means that when we explore the oceans and outer space, we look to the preservation of these other life forms because they have the inherent right to exist simply because they can be found nowhere else in the universe. Plants and animals are a special part of God's creation. While Copernicus was right about location of the Earth in relation to the universe, he was mistaken about importance.

Since we clearly know there is no meaningful life outside of the Earth, we need to preserve our diverse life forms and eventually take them with us to the other planets. They will be there to share in our existence. Over several centuries, we can make Mars more habitable and maybe 500 years from now bring life to that empty planet. Transforming a lifeless planet to one that supports Earthly plants, animals, insects, birds, and humans will be an undertaking of epic proportions. Just like exploration of the non-European world was a monumental task 500 years ago.

We know now from study and observation that animals have feelings like fear, sex for pleasure, anger and excitement.[3] Part of the reason for the conclusion that other animals have clear feelings of love, anger and jealousy is that under the a thin layer of skin coverings the brains and DNA of humans and other primates are very similar. Animals are our evolutionary cousins. As we observed earlier, humans share approximately 98.5 percent of the same DNA as a chimpanzee.[5]

Researchers and pet owners having vast experience around non-humans have observed a variety of emotions among a vast array of animals. In The Smile of a Dolphin, edited by University of Colorado biologist Marc Bekoff, 50 researchers who have spent their careers studying animals including cats, dogs, bears, chimps, whales, elephants and various other creatures have legitimized research on animal emotions.

The researchers have observed chimps die from grief and elephants express joy at reuniting with family groups.[7] Our words cannot properly express what these other creatures are feeling since we do not share the same communication. Animals have their own complex communication. We just don't

understand how this communication takes place or their meanings. Some research is taking place worldwide on what elephants say to each other when they send low frequency waves that humans cannot hear.

We know from observation that dolphins work and play together in groups. They make various types and frequencies of sound, many beyond the human ear's ability to hear. We don't yet know what these sounds mean. But with time and research we will learn. Some researchers are making progress. In an excellent CNN story, "There Is More to Animal Communication Than Meets the Ear", correspondent Rusty Dornin talked with various researchers and observed:

> "Kangaroo rats, for example, communicate by stamping their feet. Recordings of their syncopated toe-tapping suggest to researcher Jan Randall that there is more there than just a congenital sense of rhythm.
>
> "What the rat is saying it when its foot-drums an alert is 'I'm alert ... I see you ... go away.'"
>
> Bio-acoustical engineer Bernie Krause has gone from the equator to the Arctic Circle, eavesdropping on the animal kingdom. He believes animal communication is quite complex.
>
> "I'll see evidence of creatures having exchanges between one another ... behavior that kind of relates to vocal communication that's astounding."
>
> Killer whales with accents

Krause says killer whales have detailed chats when on the attack, and that the accent of one pod might differ from that of others.

"There may be groups in the area that have the same language and articulation," Krause said, "but each pod or group of animals has its own vocal accent which is unique to that pod."

> Ornithologist Luis Baptista says sparrows sing different dialects in each region. He says birds can also give more than one danger call.
>
> Another researcher says that prairie dogs bark differently depending on the predator. There's one bark for coyotes, one for hawks and one for humans. The researcher claims there's even one for a human carrying a gun.
>
> Some scientists scoff at such interpretations and say animals are capable of only the simplest alert calls. But a growing number agree that talk amongst the animals is anything but dull.[7]

As we learn more from our studies of plants and animals, these complex evolutionary cousins need protection from humans to survive. If animals have “feelings” and exist nowhere else in our inner solar system, do we have the moral right to kill them just because we have the ability? Laws are evolving to reflect the change because of man’s relationship with nature. The present Western Christian view is animals are chattels and people have property rights in these living, breathing creatures. As Gary L. Francione, law professor at Rutgers states:

> “The problem is that human interests are protected by rights in general and by the right to own property in particular. As far as the law is concerned, an animal is the personal property, or chattel, of the animal's owner and cannot possess rights. Indeed, it is a fundamental premise of our property law that property cannot itself have rights as against human owners and that, as property, animals are objects of the exercise of human property rights."[8]

Some of the extreme animal rights groups want this view to change and consider non-human creatures as “companions”. We must be careful not to be anthropomorphic in our studies. But clearly, we have a difficult time measuring human emotions, much less the feelings of animals.

Those of us who have dogs know they get jealous, angry, happy and like to play. They have a full range of emotions and some have the intelligence of two-year-old children. They don’t care what happens during the day at your office. Dogs are pure happiness. They don’t care what is on the news, the latest political scandal or what the stock market is doing. All they are concerned with is they want attention. There are millions of pet owners in the United States and worldwide.

Pets and plants add to the mental health of the public. When nursing homes have pets available, the happiness and health of the residents improves. This holistic approach to society makes for a healthier and happier public. Respecting God’s creation ultimately results in benefit for humanity. There is theological guidance:

> “And God said, Let the waters bring forth abundantly the moving creature that hath life, and fowl that may fly above the earth in the open firmament of heaven. And God created great whales, and every living creature that moves, which the waters brought forth abundantly, after their kind, and every winged fowl after his kind: and God saw that it was good. And God blessed them, saying, be fruitful, and multiply, and fill the waters in the seas, and let fowl multiply in the earth. And the evening and the morning were the fifth day. And God said, Let the earth bring forth the living creature after his kind, cattle, and creeping thing, and beast of the earth after his kind: and it was so. And God made the beast of the earth after his

kind, and cattle after their kind, and everything that creeps upon the earth after his kind: and God saw that it was good." GENESIS 2: 20-25[9]

Or this passage from Ecclesiastes 3:19-21:

"Man's fate is like that of the animals; the same fate awaits them both: As one dies, so dies the other. All have the same breath; man has no advantage over the animal. Everything is meaningless. All go to the same place; all come from dust and to dust all return. Who knows if the spirit of man rises upward and if the spirit of the animal goes down into the earth?"[10]

Our armada and Air Force can bomb any nation back to the Stone Age. Our armies can decimate any armed forces brought against us. Now that we have achieved global dominance, we have a moral choice: Use that power with wisdom to protect the plants and animals that exist only on this planet or holocaust. The other choice is to continue on our reckless path of killing plants and animals just because we can. That path has led to our present disaster. This is why we have the pandemic that has changed our entire history.

There are people who knew of the danger facing our small planet because of our mistreatment of animals. Why did they know? They looked. Shaun Monson tried to warn the world about what would happen if we continued on the path we were on in killing over 150 billion animals, destroying the plants and engaging in simply reckless behaviors. His film "Earthlings" in 2005 was a profound warning. We could not continue on this path. It would destroy life of all kinds and ultimately humans. According to Mr. Monson, "virtually all viruses that harm humans are zoonotic"**[11]** The scientific data supporting Mr. Monson's observations is overwhelming.**[12]**

We will either change our behavior and start treating animals with respect, quit the cruelty and mass slaughter, or human civilization will collapse. Pandemics will continue and become even more deadly.**[13]** As we switch from our current agriculture infrastructure to a plant-based diet, in addition to saving the environment, we will ultimately save ourselves. This change is going to occur because of economics, not the sudden realization that it is immoral to continue killing plants and animals.**[14]**

Technological change is the one constant in human civilization. The stone age ended not because we ran out of stones. The bronze created by human ingenuity resulted in much better technology. The steam engine was replaced by the fossil fuel age. The greenhouse gases of the fossil fuel industry are being replaced by green energy. These changes will continue. Now, industrial farming of animals is being replaced by plant-based protein. The reason being, it makes economic and environmental sense.**[15]**

Chapter Nineteen

Young People Can Save the World

"We can judge the heart of a man by his treatment of animals."
-Kant

Ours is a global movement. The goal is saving the plants and animals by not killing them just because we can. Transforming the habits of a human species that is still a very tribal meat-eating animal is difficult but not impossible. The world needs to listen and follow the advice of scientists like Dr. Daniel Pauly, conservationist Jane Goodall, filmmaker/explorer James Cameron and numerous others. There is little time left. The sharks of the ocean are the top predator. They are being slaughtered to make shark fin soup.[1] This, despite the fact that the fins are like the fingernails of humans, where all of the toxins gather and there is no nutritional value.

This practice can be stopped. When the human population was under one billion and technology was limited with wooden boats fishing close to shore, killing sharks for their fins, while repulsive, would not destroy the food chain and alter the ecosystem. Today, sharks have no chance. Killing the top apex predator is a disaster.

Fiona Ayerst/Marine Photobank

There are alternatives to killing sharks for shark fin soup. One is ecotourism. If you like to scuba-dive, you can carefully look at the amazing wildlife just off your coast. Sharks are one of the most amazing and beautiful creatures. Asian societies have a choice, stop killing the apex predator or collapse the ocean's ecosystems. A better path for the companies out killing the sharks is to hire them to take people out on tours of the oceans to look and admire the wildlife. Make the shark fin boat captains eco-tourism guides.

We cannot just tell people, your career is over, starve. With a global depression caused by greed, mismanagement, a super-virus and sheer stupidity, we need a path forward that will work for more people. The global economic system works well for a handful of people who own most of the global assets.[2]

Japan continues to kill whales under the false premise they are doing “research”. Norway, Russia and Iceland are also whale killers.

Calf.jpg Uploaded by Grolltech Created: February 6, 2008

“A whale and a calf being loaded aboard a factory ship, the *Nisshin Maru*. The sign above the slipway reads, "Legal research under the ICRW". Australia released this photo to challenge that claim. In November 2014, Japan announced that it would resume hunting whales in the Southern Ocean, but that it would reduce its catch target by two-thirds. Japan's Fisheries Agency said that Japan intends to catch 333 minke whales each year between 2015 and 2027, down from 935 minke and 50 fin whales. It said the hunts were needed for collecting scientific data and were exempt from a 1986 international ban on commercial whaling, despite the ICJ ruling”.[3]

When the politicians of Japan, the world’s third largest economic power, ignore sea life, the rest of the world suffers the consequences. The Japanese government has clarified that it will not respect international scientific consensus that continued whaling is not for scientific research. As Virginia Morell reports in Science Insider:

> “In an unprecedented move, an expert panel that advises the International Whaling Commission’s (IWC’s) Scientific Committee has rejected Japan’s latest plan for resuming the killing of minke whales in the Antarctic. Japan, however, says it will continue with its whaling plans.”[4]

The Japan is a modern society with important traditions. One is respect and use of good manners. One solution to ending Japanese whaling and killing of dolphins is to politely ask this government to end the slaughter. Make the case to the Japanese government that dolphins and whales are highly intelligent creatures with complex social systems, their own communication and killing them because we can constitute a crime against nature and future generations. Ask, do not demand, use good manners and the great Japanese people will respond.

Young people in Japan do not have the same values of their parents and grandparents. They care about the environment, the plants and animals that share this planet with us. We must contact Japan's dwindling young people and encourage them to become part of our global movement. In an interconnected world, Japanese youth before the virus, engaged with young people all over the world. They attended universities abroad, traveled on vacation, and played sports all over our small planet.

Whether Japan as a society will withdraw inward to protect its people and become isolationist remains to be seen. We are just in the beginning phase of the economic effects of this virus pandemic. How it will affect Japanese whaling, exports of their products all over the world, their defense arrangements with our fallen empire—these issues will be sorted out.

The United States provides for Japan's defense.[5] With the collapse of our economy and millions of unemployed, tens of thousands dead and dying from the virus, poor health habits and soon famine, keeping our military bases open in Japan is probably not an option.

If that does not work, put economic pressure on this government and their industries. A global consumer boycott of whaling and dolphin-killing nations will stop the slaughter faster than you can say sushi. Despite the claims of "tradition," Japanese activists work to ban whaling and killing of dolphins. As Shaun O' Dwyer reported: "Junichi Sato and Toru Suzuki, two Greenpeace Japan activists, were convicted of trespass and theft in 2010 after seizing a parcel of whale meat illicitly posted by a Japan scientific whaling employee, which they presented as evidence to prove allegations of embezzlement within the scientific whaling program."[6] These Japanese environmentalists put their freedom on the line to stop the slaughter.

Japanese leaders are like politicians everywhere. They bow to powerful interest groups, more interested in money than the environment; meanwhile the slaughter continues. What will work in stopping the slaughter of the oceans is a global consumer boycott of Japanese goods and public protests before Japanese embassies. This can be done through social media and public awareness should be pursued immediately by environmental groups working together. Japan, Norway, Russia and Iceland will stop killing whales when their greedy leaders suffer the consequences of the vicious policies causing so much harm to the oceans.

The virus has changed everything. Without tax subsidies, whale killing cannot be subsidized. The killing will stop because the youth of the world will rise up and boycott Japanese products. If we do not stop killing the plants and animals, more viruses will transfer from the animals and there will be many more pandemics. It will stop. We can volunteer or be drafted by our great Earth Mother but killing her creatures will end.

Despite political support of whale and dolphin hunting by Japan, Norway, Russia and Iceland, young people and environmentalists in these countries are opposed to the slaughter. Some environmentalists from whaling countries have won prestigious

international awards for their environmental work. The Russian environmentalist Dmitry Lisitsyn won the Goldman Environmental Prize in 2011.[7] The Goldman award is the equivalent of the Nobel Prize, for environmental work. He worked hard to stop whaling on Sakhalin Island, a critical breeding area for endangered Western Pacific Gray whales and the Pacific Ocean's most productive salmon spawning ground. Whether that work will continue with the impact of the virus on the human population remains to be seen.

The planet's youths understand their future is at stake. They are making progress in environmental/conservation issues all over the world. Young people use social media and spread the message in a hurry. Facebook has over two billion users. Instagram has more.[8] China, Russia, India, Brazil, all have social media. This new communication spreads the word about environmental or other issues.

If these governments refuse to stop killing dolphins and whales, the issue can be forced with a consumer boycott. Consumers in a capitalist economy have the power to change the world. A consumer boycott on Earth Day in April will cause any government to immediately take notice. The value of killing dolphins and whales is far less than the economic damage of a one-day boycott of all products from whale and dolphin hunting nations. Add protests at their embassies all over the world and this economic and political pressure will yield results.

The same consumer boycott power can stop the slaughter of the sharks for Asian shark fin soup. The tradition in Asian societies of serving shark fin soup at important functions like weddings and as a symbol of wealth and success is killing the oceans to produce this delicacy for families that don't understand or don't care about the devastation they are doing. Traditions can change as young people explain to their elders the harm caused by these behaviors. Young people can insist on not serving shark fin soup.

The sharks are caught and while still alive their fins are cut off. Then they are thrown back into the oceans unable to swim or defend themselves. It is cruel and disgusting behavior. There are cultures out there that absolutely ignore any living species. Killing sharks, dolphins, whales, tuna and hunting them to extinction is not viewed as wrong. Here young people can make a huge difference. As they explain to their elders, this is wrong, change will happen.

Whales and Dolphins Wikipedia #6

There is no common view of the natural world among the planet's many ethnic groups. Some cultures eat dogs, while others have them as pets. Japan protested that the ban on whaling was cultural racism since the complaints against them were the strongest. Norway, Russia and Iceland hunt whales but Japan was singled out.[9]

When traditional societies were whaling in tiny wooden boats with spears it was almost a fair fight. Whalers were often killed and there were thousands of the magnificent whales. As technology progressed and humans were no longer whaling in tiny wooden boats. Now in huge steel ships with cannons and harpoons loaded with explosives, the whales, like all other flesh creatures, did not have a chance.

This nonsense by the small Japanese whaling community that their "tradition" should be preserved would make some sense were they fishing in Japanese waters in small wooden boats like their ancestors. That is not what is happening. Japanese whalers are in large modern ships and the whales have absolutely no chance to survive from their "tradition". They kill whales all over the world. Just as the Saudi royal family mistreats women in the name of "tradition" and the Taliban shot a young girl in the face to prevent her from getting an education, some traditions must end. Whaling, killing dolphins and emptying the oceans of sea life and wild animal markets is inexcusable.

Whales are a living treasure as are the Creators' beautiful creatures that exist only on our tiny planet. Killing dolphins, tuna, swordfish, marlin, sailfish and cleansing the oceans of life is immoral and a crime against future generations. It must be stopped and the governments subsidizing these commercial fishing and whaling and killing of dolphins are making a huge mistake for short-term votes and industry profits. Education and public awareness can stop the slaughter of the ocean and land creatures.

The global community does not share Japan's view that slaughtering whales with high-tech ocean-going vessels using harpoons with explosives is "traditional". We see it as the complete nonsense it is. Slaughtering whales and dolphins and emptying out the oceans has nothing to do with "tradition" — it is a choice. Killing baby seals was viewed as a tradition in Canada. That does not mean it is acceptable. After enough global protests, that practice ended.

Young people in Asia and all over the world are ending whaling, dolphin killing, destruction of the oceans, and shark finning. Sports figures and prominent businessmen are advocating the end of shark fin soup. Some governments are responding to the public awareness campaigns.

WildAid, an environmental conservationist non-profit organization based out of San Francisco is at the forefront of working to educate people about the harm to the oceans caused by shark fin soup. Working with other conservation groups, their public awareness campaign is having positive results. In their words:

> "An estimated 100 million sharks are killed every year with fins from up to 73 million used for shark fin soup, primarily to supply the market in Mainland China. A pair of shark fins can sell for as much as $700 per kg in Asia. Some shark populations have declined by up to 98% in the last 15 years and nearly one-third of pelagic sharks' species are considered threatened by the International Union for the Conservation of Nature.
>
> Our latest campaign features several new PSAs including sports icon David Beckham, actor and director Jiang Wen, and actress Maggie Q."
>
> "Our campaigns, in combination with government bans at official events, have contributed to a reported 50%-70% decrease in China's shark fin consumption.[10]

The Chinese government has banned shark fin soup from state functions.[11] Environmental groups like Fins Attached, Shark Savers, Shark Angels, Shark Whisperer and the Sea Shepherd Conservation Society, and WildAid, the World Wildlife Fund, GreenPeace, the Nature Conservancy, BiteBack and numerous foundations and research institutes are spreading the message.

How many of these non-profits will survive the 2020 collapse of the global economy and virus is the same question we all are asking ourselves. Had the policy makers listened to bright young people like film producer, writer, director, Shaun Monson, in his enlightened two documentaries, Earthlings and Unity,[12] we could have avoided the entire Covid-19 virus and the deaths of millions of people. He has been warning people for years that slaughtering animals was not only cruel but an environmental disaster. According to Mr. Monson:

“Viruses can jump from wild animals to humans and that is what happened here. It is going to quit happening until we stop killing them and start treating them with dignity and respect.”[13]

Fishermen displayed their sharks for sale at a market in Banda Aceh, Indonesia, in 2011. Rapid economic growth across Asia has increased the demand for shark fin soup.Credit...European Pressphoto Agency

Earthlings exposed the incredible cruelty of humans toward the other passengers on spaceship Earth. Each year humans kill billions of animals all over the world for food, fur, or just plain old cruelty.[14]

In 2011, President Obama signed the Shark Conservation Act that closes loopholes to obtain shark fins.[15] This change in the law ended shark fin soup in the United States. The same thing needs to be done globally. The Law of the Sea Convention needs to be amended to ban shark finning, whaling and killing dolphins as well as creating a Global High Seas Marine Preserve.

What makes this environmental campaign difficult is the life being protected are underwater. People can’t see under the oceans and understand the devastation caused by shrimp trawlers scraping the bottom of all life. The commercial vessels far out to sea cannot be seen slaughtering tens of thousands of creatures and discarding them as “by-catch.” There is no park ranger out in the oceans issuing citations and making arrests. Here is where changes can be made. Navies of various nations can enforce the ban and protect the fish stocks.

Changing cultural habits that have taken several centuries to develop can be accomplished with careful use of media resources. Shark fin soup is more a tradition than a food. So is racism and homophobia a “tradition,” but that does not mean it can’t be ended. Slavery has pretty much been eradicated. Women vote and hold high office in civilized parts of the planet. Environmental laws have been passed. Change is not only possible but continuous.

The aircraft carrier battle groups we discussed earlier are expensive. The U.S.S. Gerald Ford, a Nimitz class aircraft carrier, cost over $12 billion dollars to build. The carriers project military power. To what end? As numerous scholars have noted, intervention in poor countries by rich countries is a failure. Having great military power and the ability to project it across the world does not mean foreign intervention will succeed. Vietnam, Algeria, Angola, Cuba, Cambodia, Iraq all show foreign intervention by rich nations failed.[16]

With the collapse of Pax Americana, we will no longer be able to afford over 5,000 military bases and/or installations in 90 countries. Those days are gone whether policy planners and politicians want to admit this reality or not. We have millions of unemployed in the United States and hundreds of millions of unemployed all over the world.

Projecting military power will not save the fish stocks. Where these carriers are based is a political and economic decision that cannot be ignored. Without the 6th fleet, San Diego, even with its tremendous weather, would have a tough time economically. Camp Pendleton is north of San Diego. Like the rest of America, Southern California spends lots of money on defense and little on space and ocean exploration. This is why there has to be an economically and politically viable alternative to defense spending. Young people graduating from college and high school cannot be left without quality high-tech jobs.

The transition from defense spending to exploration can be accomplished by placing NOAA and NASA under the jurisdiction of the Department of Defense. NASA needs to be administered and funded by the U. S. Air Force. NOAA needs to be administered and funded by the U.S. Navy. These branches of the armed forces have larger budgets, contracting experience and the administrative personnel to manage these important agencies. Then these agencies will get the proper funding to pursue their missions and communities like San Diego will not lose jobs. New jobs will be created. New industries will rise from exploring and protecting the wildlife in the oceans, exploring the solar system and cleaning up the planet.

The exploration of the oceans, Mars and the asteroid belt, as in ancient times, should be a military endeavor. Cortez and Pizarro were soldiers as were most early Spanish explorers. With the vast array of global bases, this transition is ideally suited to work with many nations to explore the inner solar system. Communities like Hill Air Force Base in Ogden, Utah, can repair service modules to Mars rather than their current functions that include maintaining our ICBMs. This redirection of the military mission from the Cold War and the War on Terror to exploration of the oceans and inner solar system will avoid the shock of unemployment to the U.S. economy so heavily

dependent on the arms race and war as economic policy. Again, we cannot just “cut” defense spending.

The transition from aircraft carrier battle groups to small patrol boats based out of San Diego will prevent unemployment and create new industries. Shipyards will get new work in building the right product for the exploration of the oceans. The U.S. Navy can stop shark finning and over-fishing with the right ships. High seas patrol boats can engage in high-speed chases with sea poachers and board trawlers for inspection.

The United States can change its entire defense budget and cost structure by gifting aircraft carrier battle groups to other nations. Give one aircraft carrier battle group to the Japanese, one to Australia, one to South Korea, two to the European Union, one to Brazil and keep four carrier battle groups.

Unfortunately, China and Russia continue to be aggressive and military power is a reality of life. Defense of the Free World should be a shared cost with our allies, not the United States shouldering the majority of the burden of stopping Chinese and Russian aggression toward other nations. The Chinese aggression in Tibet is real, as is the Russian invasion of the Ukraine, even if it was brought about by Western interference in that country. Young people have to live with last century’s leaders who still have a vision of empire and military glory. That can change. Young people are the hope for the future.

We live in a missile age. Losing one carrier would be a national tragedy. The better solution is sharing the costs of global defense with our allies. Save costs in this age of deficits and global depression by gifting these expensive weapon systems. They are operational, expensive to operate and maintain and are outdated antiques from the last century.

Transitioning to high seas patrol boats and research vessels for NOAA and the Coast Guard is practical. Sea power is a choice. In an interconnected world where problems require cooperation not conflict, like it or not we have to build ships that can enforce a global ban on high seas commercial fishing. The companies that build these floating airports can also build more research vessels for NOAA, deep-sea exploration and mining vessels and high-speed boats to patrol and catch poachers.

They can also build effective spaceships for the exploration and colonization of Mars and beyond. This shift in policy from defense to exploration will create jobs for the university students in engineering, oceanography, biology, physics and numerous other disciplines.

A Trident submarine can launch 192 nuclear warheads on any nation. The United States has 14 of these Ohio class submarines.[17] None of these impressive machines can save the tuna stocks or stop whales and dolphins from being slaughtered. Again, none of these nuclear submarines can do ocean mining or research. America can bomb any country on Earth back to the stone age. But that does not help the environment or the economy or provide a future for young people. A Trident submarine and $5.00 will buy you a cup of coffee. They cannot stop a microscopic virus from shutting down the global economy. Defense spending is powerless against our Earth Mother’s immune system.

Even one thermonuclear warhead destroying one city anywhere on Earth would be a tragedy of unimaginable proportions. One U.S. or Russian submarine can effectively destroy civilization. We can also destroy civilization by collapsing the ecosystem. Even without nuclear war, losing the environment war with nature will still result in the extinction of all species on this unique and tiny planet.

This virus that jumped from a pangolin to a human was bound to happen. The wildlife markets all over the world need to be banned under international law immediately. This is not optional. Failure to ban these wildlife markets and close down these industrial farms will cause more pandemics and an unpredictable future.

Young people today were not around when these Cold War weapons were invented. These nuclear submarines were built at a time when the Soviet Union was on the other side of the Cold War. Today China is the United States' second-largest trading partner. Bombing China is not practical and is ridiculous. The Chinese are among the largest holders of U.S. bonds. Any attack on China is an attack on the United States. The two economies are so intertwined they are in reality one global economy with two governments and millions of moving parts and tens of thousands of companies engaged in trade.

The youth of the world need to jointly clean the oceans of plastic at their source. All nations with navies need to build patrol boats that can enforce a global ban on commercial fishing and dumping on the high seas. China, the United States, Russia, Taiwan, the European Union may be trade rivals but these nations need to close the high seas to commercial fishing and clean the oceans. Again, this will create entire new industries.

These countries have the ship-building capacity to create patrol vessels. The universities exist to produce the highly skilled workers for the new industries of deep-sea mining, wildlife preservation, oceanography, underwater archeology, basic cleanup and numerous other new jobs. What is not there is the political will to transform the World War II and Cold War weapons to patrol boats, research vessels and mining vessels. How can young people make this transition? Public awareness begins at home. Educate family and friends and get involved to make change happen. Young people can make the difference in creating a future where sea life still exists.

The only way the grip on the taxpayer dollar can be shifted from outdated weapons systems to protecting the oceans is for young people to vote to use the same communities and same defense contractors. General Dynamics Electric Boat division builds the Ohio class nuclear submarines.[18] There is no demand for these vessels other than that created by Congress for employment in their districts. Only the ongoing basing and maintenance of these ships provides economic activity. That does not create more jobs for young people in this century. What these weapon systems do is endanger humanity and create unemployment.

Having General Dynamics' electric boat division build deep-sea mining and research vessels will create new jobs for young people graduating from the many fine universities in Rhode Island and Connecticut. Small companies will benefit as suppliers and a multiplier effect will ripple throughout the economy.

Unlike space exploration, where the return on investment will take decades or longer, the return on investment from ocean exploration will be almost immediate. Saving the fish stocks alone is worth billions. The return on investment will come from the immense mineral wealth that lies under the waves as well as saving the fish stocks. Mining of the oceans is already happening. America can miss this new huge market by continuing its present course. Or policy can shift, and young workers can obtain the benefits of deep-sea mining and exploration. These minerals also include diamonds off the coasts of South Africa and Namibia and deposits of tin, titanium and gold along the shores of Africa, Asia and South America.[19]

Newport News shipbuilding facility is owned by giant defense contractor Northrop Grumman and located in Newport News, Virginia. Clearly this great company can build another Nimitz aircraft carrier. But they can also build research vessels for NOAA's expanded role in saving the oceans. American shipyards and defense contractors can build *anything!* They need to create new industries for young people for this century.

We baby boomer generation managed to not blow up the world. But we left an absolute mess of an environment and a crowded planet. This mess can only be cleaned up by the young people working with their friends all over the world. It will take decades to undo the massive damage done to the environment. This task is an opportunity to re-industrialize America and bring back millions of high-paying, meaningful jobs for the hundreds of thousands of young people graduating every year from colleges, universities and high schools.

The massive garbage in the oceans has received some attention. The cleanup can be accomplished in a fairly short time frame. The United States can lead the world in a global campaign involving university and high school students to clean the oceans. This labor-intensive campaign should include the world's militaries. It takes little skill to go to the beaches of every part of the world and pick up the plastic garbage. High school and college students globally can as part of their curriculum and a requirement for graduation clean the environment. As part of this cleanup, help the polluting nations to stop polluting by developing their waste disposal and recycling systems. This initiative again, creates new industries and much needed jobs.

Jail and prison labor can also go to beaches and just clean them. Picking up garbage is labor intensive work which will create low-skill jobs for the millions and millions of people all over the world currently unemployed. It will also create high-skill jobs on re-using the recovered materials to create new products from the recycling transforming the global economies to sustainability.

If you don't want the oceans to be full of garbage, quit dumping trash into the seas! It's that simple. This goal of keeping the oceans and beaches clean can be accomplished with a massive public relations campaign and global cooperation. Having a clean community is a choice made by the people who live there. Some communities demand clean streets, yards, parks and beaches; others don't. We see this pattern all over the world. Demonizing other cultures is politically expedient does not solve anything other than to create more hate and make a difficult world more dangerous.

Mazatlan, Mexico, used to be a trashy resort city where the beaches were disgusting and full of garage. Today, under the leadership of former Mayor Alejandro

Higuera Osuna, the beaches and city are clean and safe. His wife Sylvia helped the World Access Project deliver wheelchairs and hold a sports camp for people with disabilities. Again, it is a community choice to be clean, modern and safe. Jobs are created for the people who live in Mazatlan and from the increase in tourism from the nice hotels and clean beaches.

It is great fun to watch the dolphins swim to shore alongside the surfers in Mazatlan. The dolphins feel safe enough to interact with the tourists and locals and play with them. You can also see them from shore when you are at your hotel enjoying a break from cold weather. It's not unusual to see people on shore put beached sea rays back in the water.

Other communities are not as clean. When you travel to South Beach, Florida, during spring break, you witness disgusting, "trashy pigs gone wild." The beaches are full of trash from the students on spring break. They party and just throw their litter everywhere. If college students on spring break trashed California's pristine beaches, the locals would beat them up and have them arrested. The people from California pride themselves on having clean, wonderful beaches. Miami, Ft. Lauderdale and other eastern Florida communities are dirty. This can change by insisting that young people not trash these beaches. Enforce city ordinances on trash and arrest people who litter.

It is not uncommon to see garbage all over beaches on the west coast of Florida. Contrast those communities with Sarasota, Clearwater and Dustin, Florida. Their beaches are clean and beautiful. This same pattern exists all over the world. Some communities choose to be clean and safe, like Seaside, Oregon. Others are disgusting, like the ungovernable Somalia. The same is true of people's homes and lives. Being trashy is a choice. To have a healthy planet, have healthy people in healthy communities. Sao Tome and Rwanda are poor. But they are clean countries that can give lessons to developing nations on cleanliness. Their traffic and streetlights work, and their Internet is high quality. Their hotels are as nice as any in the developed world. Rwanda is beautiful. They do not allow plastic bags and it is very well run.

Young people can effectuate these changes by doing something very simple in democratic societies- VOTE. The failed extremist politicians who believe the world will end and consequently don't care about the future all have term limits. These term limits are called elections. In a democracy, politicians are your elected employees. They are supposed to work for you. If you do not like the job they are doing, fire them. It is that simple. Money does not control politics, votes do.

You can see the job your politicians are doing with the results of their work or lack of it. The fish stocks are collapsing. The "war on drugs" and the "war on terror" are ruining the planet. The politicians are not stopping the slaughter of the oceans. These politicians can all be fired by voting them out of office in the democracies of the world. In the countries where voting is impossible like China- economic pressure of consumer boycotts can and will change their behavior. Despite the lack of democratic traditions, China is different.

The Chinese government has very intelligent people in charge. Their work in saving Pandas from extinction, banning shark fin soup from state dinners and now working on global climate change is prudent leadership. Despite the mythology in the

West, Chinese leaders care very much about the environment, listen to the wants of their massive population and are working to solve international problems. They are trying to solve extremely difficult environmental issues yet continue with economic growth that has done wonders in pulling millions of people out of poverty and made China the second largest economy on the planet.[20] Since leadership is vacant in the West, the Chinese government will need to take a major role in cleaning up the planet.

Young people often feel powerless and do not realize how much power they really have. Youth can make a difference in the global society by making a difference in their world. If you don't buy plastic water bottles irresponsible companies will quit making them. Americans use on average 167 plastic bottles each year but only recycle 38.[21]

If you don't recycle then, yes, this plastic trash will pollute the Earth. Almost 90 percent of municipal solid waste is packaging and virtually all of it can be recycled. Vote in politicians who will change the laws and make recycling mandatory worldwide. There is no reason other than laziness for homes or communities to be trashy. Criminals that belong to international crime organizations Al Qaeda, the Taliban, Boko Haram, ISIS, drug dealers and others have one thing in common besides false religious beliefs. They are trashy, dirty, hairy, illiterate and want a world that is a garbage dump. Being clean is not a priority to people engaged in crime and violence.

Again, these are individual choices. How we choose to live our lives is what will ultimately save the living planet. Young people, please be confident. The future is hopeless if you watch others work and do nothing. You can do it. It will just require getting involved and working with friends from all over the world.

Chapter Twenty

A Future That Works

"History is not 'just one damn fact after another,' as a cynic put it. There really are broad patterns to history."

— Jared Diamond

There are solutions. To a carpenter, all problems can be solved with hammers and nails. To a policeman, the solutions are more arrests and jails. As an attorney, law is the solution to many of the difficulties facing our tiny planet. The "rule of law" has many benefits — the primary one being civilization. A future that works is one based upon international law to govern human behavior. Fortunately, that is the direction we are going. We live in an age where international law is finally taking off. It's taken a while, but international law is working and makes life better.

Just as the Roman Empire fell, on March 25, 2020, Pax Americana ceased to exist. The politicians who would constantly lie, steal and flaunt their opulence did not realize it was over. But it was. A recession and a virus brought down the most powerful empire in the brief history of the world.

We have no choice now but to permanently ban wild animal markets. This pandemic that has caused the 2020 collapse of the global economy is the most important political event since the fall of the Roman Empire. While some politicians are so dense, they can barely speak in complete sentences, it does not manner anymore. We can't lie our way out of this environmental and economic mess. We have to use the Rule of Law.

The plants and animals can no longer be treated as our property to with as we please. They have souls and now they need legal protection. Just because we can kill a giant 2000-year-old Redwood does not mean it is right. We can kill dogs and eat them. We can kill intelligent creatures like whales, elephants and numerous other passengers on this tiny spaceship traveling through space and time. But that does not make it right. Murder is wrong just because the person being killed is not a human. We are the guardians of life on Earth. Law is important. Without law there is only chaos, crime and the collapse of all civilization. We must respect God's laws which are simply the laws of nature.

If we have wild and domesticated animals, viruses will jump from the animals to humans and cause a pandemic. Look at these poor creatures. You can see the suffering in their eyes. They are in cages awaiting execution so a human can have them as a meal. The plants can feed us. The fish can provide protein, but we just cannot kill them all and waste them. Regardless of how much people who hoard wealth and income may have a disregard for law; it does work. We depend on it and enables the modern world to exist.

International contracts are honored. Consequently, global trade flourishes. Before the virus, we had extensive international trade. We would drink Argentine wine at Thai restaurants. Our clothes come from Honduras, our cars parts from all over the world and assembled in Mexico and designed in Japan. We would drink Mexican beer while watching players from all over the world compete dat the U.S. Open. We used our Korean-made phones to call friends in Canada, Central America, Europe and Asia.

Our computers accessed newspapers from India, Egypt, Israel and South Africa and other parts of the world. We had friends from Brazil, France and numerous other countries. Again, we were 22 hours from any major city on Earth. Many of us had been to several countries. We had rugs from Afghanistan and art pieces from Costa Rica, Sao Tome and Rwanda.

Our planet is tiny. Several of us have traveled around the world more than once. Many of us have relatives in other countries. Before the virus, we watched the World Cup. We would see athletes from all over the world. The same is true of the Pan American Games and numerous international mass spectator events. These were made possible because of communications satellites that were the result of space exploration technology. Even new sports like wheelchair tennis, had international participation that was never possible before in human history. This resulted from jet travel, modern medicine which were also by-products of the space program.

There are so many international business deals they could not be counted. Trade flourished all over the world between poor countries, across oceans and borders. From international mining deals in Bolivia to tourists riding elephants in Thailand, international law had made more travel and trade possible than at any time in history. The developing world became richer, their economies more modern. As we became more interconnected, we used international law every day. The result was life was better. Yes, there were environmental problems and international criminals, but this was the best time in human history to be alive.

The standards for numerous products, services and even electricity were set by the International Standards Organization. In their own words, “International Standards make things work. They give world-class specifications for products, services and systems, to ensure quality, safety and efficiency. They are instrumental in facilitating international trade.” Over 160 countries were members of this non-governmental organization[1].

This was just one of hundreds of international organizations that made life better. The result was the terrific world we lived in with huge opportunities. The international criminals claiming to be “religious” who would destroy it all were annoying but not an existential threat to human life on the planet. The virus changed all of that.

Companies from all over the world traded on the New York Stock Exchange. Money was invested all over the world at the speed of light and governments could not keep up with technological change. With the push of a button, money left one country

and worked in another. The nation state is often powerless to control the speed of capital. Tax havens popped up all over the world like mushrooms after a rain as they try to capture fleeing capital. Never was money able to move this fast and create so many opportunities yet cause so many problems. From running illegal drugs to small arms traffic to the legal markets of international trade, money moved at the speed of light.

A future that works involves ending this “War on Terror.” It ends when the global community stops calling it “terror” and calls it “crime.” This requires working toward a common international legal system. The World Court is the ideal forum to try individuals committing these crimes. This will involve hundreds of thousands of trials. There is compelling precedent for using law as an approach.

The United States has another failed war, “the war on drugs.” Over 2.4 million people are in jail and/or prison, all of whom have been processed legally. These people had access to the courts. Fortunately, there are not yet 2.4 million people bombing churches, mosques, restaurants and shooting young girls to prevent them from learning. There are thousands of international criminals, not millions. But if the “War on Terror” continues, there will be millions. Each drone strike and bomb that kills innocent people creates new recruits seeking revenge over the death of their loved ones.

This criminal cancer will metastasize and bring down numerous governments. People who believe they have nothing to lose are not afraid to lose everything, including their lives. Education, employment and intelligent detective work, not drone strikes, will turn the tide and change the course of history. Arrest the accused and no one else. Don’t kill bystanders just because you can. This creates hate and violence. People who would otherwise remain bystanders then join religious criminal extremists.

Here the mass media can help. Publicity is jet fuel for criminals. As these criminals see themselves on CNN, FOX News and others, they gain notoriety and followers. But for the media that gives losers a “cause,” they would remain pathetic and unknown. When someone is correctly called out as a “criminal,” they are not viewed as favorably by social media and the impressionable, discontented youth of the world. The mass media has an obligation to show the crimes and the trials as well as the punishments. That, too, can sell commercial time. Words are powerful. A “criminal” has a far different meaning than a “terrorist”. A “terrorist” is a political label. A criminal is a scum bag.

The politics behind people’s crimes is irrelevant. Kidnapping young women, bombing restaurants, killing policemen, these are all crimes committed by thugs who have no interest in the rule of law or something so simple as clean clothes and a shower. Make them appear in court in proper and clean attire. Force them to bathe and neatly trim their beards when they appear before the judiciary. Demand they treat the institution of law with respect.

These criminals are not interested in the World Cup, tennis, art, science, music, museums, history or the benefits that come with having a modern civilized society. They

want power only for power's sake and will use religion or any ideology to achieve their demented goal. The members of Al Qaeda, ISIS, Boko Haram and other criminal organizations do not file patents, create public companies, manufacture products, copyright songs and movie scripts or invent new medicines to make the world a better place. Their only skill is crime like murder, kidnapping, bombing restaurants, shooting young girls trying to get an education. They cannot compete in sporting events, so they kill athletes. Being the cowards, they are, they mask their faces and hide in the shadows. Cowards need not be feared, they need to be arrested.

Whatever behavior you feed grows. The mistake the mass media and politicians make is they feed this behavior by giving criminals major television airtime and front-page coverage of important newspapers. While it is understandable that the media like any other business must make money, it is irresponsible to inflate the criminal acts and make them political. There is plenty of room in prison for the world's criminals. Public trials where the accused are properly defended and tried before impartial judges and evidence is presented will work over the long run.

The clear advantage of trials is when people are found innocent and are properly treated with dignity and respect, they will go back to their villages and explain that they committed no crimes and the legal system worked in their case. If they engage in criminal acts again, eventually they will be caught, tried and punished appropriately.

To implement law across international boundaries, rich nations will have to help poor countries develop their legal systems. This is happening. The U.S. Department of Justice and the State Department work actively with other countries in developing legal systems. These programs need to be expanded and receive more media attention. The "rule of law" is an important tool for peace.

Murder, kidnapping, bombing restaurants and shooting schoolgirls are crimes in every civilized country on Earth. The real problem is the justice systems in many parts of the planet are just too impoverished to prosecute criminals. Police officers can be bought off and the public has no confidence in the legal system. Law is a belief system based upon the shared perception of reality of the members of that particular society. When people don't believe in "rules," there are none.

The lack of law is one of the root causes of poverty and suffering on our tiny planet. Countries like Somalia have no functioning government and no legal system. Consequently, they have massive poverty. "No one owns anything," says Abda Azziz, a port worker. "Your land is your land until someone takes it from you, your car your car until it is stolen — that is the law in this country."[2] The United States produces too many attorneys. While there is no legal work here, the world needs more attorneys.

With law, the developed world can help the developing world build clean water systems and functioning infrastructure. Millions of people have no access to fresh water, much less to even consider flush toilets. Approximately 750 million people don't have clean water and over 1 billion do not use toilets.[3]

Stopping “terrorism” is a matter of changing the game to our rules where people learn that regardless of where you are on the planet, if you kill, kidnap, shoot people, torture others or bomb restaurants, you will be prosecuted and, if found guilty, punished. This will require the rich countries to make a concerted effort to economically develop and integrate the developing world into the international legal system.

A future that works will also require rich nations to obey international law. It can no longer be “do was we say, not as we do.” When the United States attacks other countries in clear violation of international law, as in the Iraq war, all rules fall apart. Global solutions in this century are not technological but political. This involves diplomacy, negotiations, treaties and funding for legal systems, prisons and training of police officers. Technology has its place. A modern technological state and the environment are not mutually exclusive events. Humans can co-exist with the environment.

A future that works requires an understanding that history has surprised us. Karl Marx is required reading. The Communist idea of public ownership of the means of production has become reality. Today, the U.S. public owns the means of production in America. Over half of Americans now own shares in public companies either in their own retirement accounts or through their pension fund from their employer.[4] As shareholders in the means of production, you can vote and demand that corporate leaders redirect defense spending toward space and ocean exploration and be responsible stewards of the environment.

A future that works requires an understanding that the collapse of the fish stocks is happening. This is not hysteria. As Dr. Pauly and numerous scientists have made it crystal clear, this is real and it can be turned around. Close the high seas to commercial fishing. It sounds simple because it is.

A future that works requires us to expect the unexpected. The Iron Curtain came down, the Cold War ended, the Soviet Empire dissolved, the United States invaded Iraq, the American economy collapsed, fanatical Islam arose from the ashes of the Iraq disaster, the fish stocks are collapsing and now climate change threatens the entire planet. Most of these historic events were not foreseen. This pandemic was new and it changed all of human history.

Change is the only constant in human affairs. Three lifetimes ago, there were no electric toothbrushes, flush toilets, Toyotas, Tesla electric cars or televisions. There are good surprises, like cell phones, laptops and great information from history’s largest library, the Internet. The entire social structure has changed in a mere 200 years from small agricultural communities to megacities and consumption and consumerism.

The massive murder of plants and animals and conspicuous consumption that caused our environmental problems can be solved. Quit killing the animals, destroying the rain forests and obviously consume less. It is the small things done individually by

many people that have the greatest impact for positive change. Do simple things like buy lots of houseplants, grow your own vegetables, be prudent in your water use and have spayed and neutered pets. By surrounding yourself with life, you become more conscious of all of Gods' creation. Make your house an "urban jungle" that is compatible with nature. Recycle all your newspapers, aluminum cans and plastic and glass bottles. Don't buy things, buy memories. Plant a garden instead of a having a lawn.

A future that works requires careful planning of what lifestyle we try to sell others. Our American lifestyle of consumerism does not bring happiness and is not attainable for most of the planet. It is not compatible with the fragile ecosystem. If people in Asia, Africa and Latin America buy into the Madison Avenue materialism myth, we will sow the seeds of a nuclear, biological, chemical and environmental holocaust. You would need over four planets to enable the rest of the world to consume energy and materials like Americans.[5]

> According to the Sierra Club's Dave Tilford, quoted in Scientific American: "The average American will drain as many resources as 35 natives of India and consume 53 times more goods and services than someone from China. Tilford cites a litany of sobering statistics showing just how profligate Americans have been in using and abusing natural resources. For example, between 1900 and 1989 U.S. population tripled while its use of raw materials grew by a factor of 17. "With less than 5 percent of the world population, the U.S. uses one-third of the world's paper, a quarter of the world's oil, 23 percent of the coal, 27 percent of the aluminum, and 19 percent of the copper," he reports. "Our per capita use of energy, metals, minerals, forest products, fish, grains, meat, and even fresh water dwarfs that of people living in the developing world."
>
> He adds that the U.S. ranks highest in most consumer categories by a considerable margin, even among industrial nations. To wit, American fossil fuel consumption is double that of the average resident of Great Britain and two-and-a-half times that of the average Japanese. Meanwhile, Americans account for only five percent of the world's population but create half of the globe's solid waste."[6]

Being the most gluttonous and obese society in human history comes with a heavy price. We spend more money on "defense" than the next 20 nations combined. China, India, Pakistan and Indonesia have over 2.7 billion people. It is not realistic that they can all live in 2,000-square-foot homes and own two vehicles. The fossil fuel emissions would be catastrophic. The efforts to control climate change would fail. Our conspicuous consumption lifestyle can't continue and cannot be adopted by the rest of the world as the model to measure human success. He who dies with the most toys still dies.

Possessions are like stones that weigh you down as you swim through the currents of life. They can be stolen, broken and require your time. With fewer material

possessions, you will save the environment and free up your life. “Who needs it” will be the rallying cry of this century. Remember, “things” cannot love you. We must be careful with the constant pursuit of possessions as often “things” are easier to acquire than to get rid of. Americans have so many “possessions” they build sheds next to garages to hold the consumer items that can’t fit in the oversized homes. Thus, on weekends across America, prior to the pandemic, there were yard sales where used goods were looking for buyers. There were swap meets where used items were sold and resold. We need to ask ourselves; do we own our things or do our things own us?

A future that works merely requires us to ask ourselves, “do I really need this thing and is it going to be occupying my shed, garage, or closet next year”? There is nothing wrong with consumption. What will work is buy what you need and use what you buy. Think of your lifestyle as “less is more.” Moderation is the key to solving most of the planet’s environmental problems. As Mark Sagoff wrote in the Atlantic:

> “The world has the wealth and the resources to provide everyone the opportunity to live a decent life. We consume too much when market relationships displace the bonds of community, compassion, culture, and place. We consume too much when consumption becomes an end in itself and makes us lose affection and reverence for the natural world.”[7]

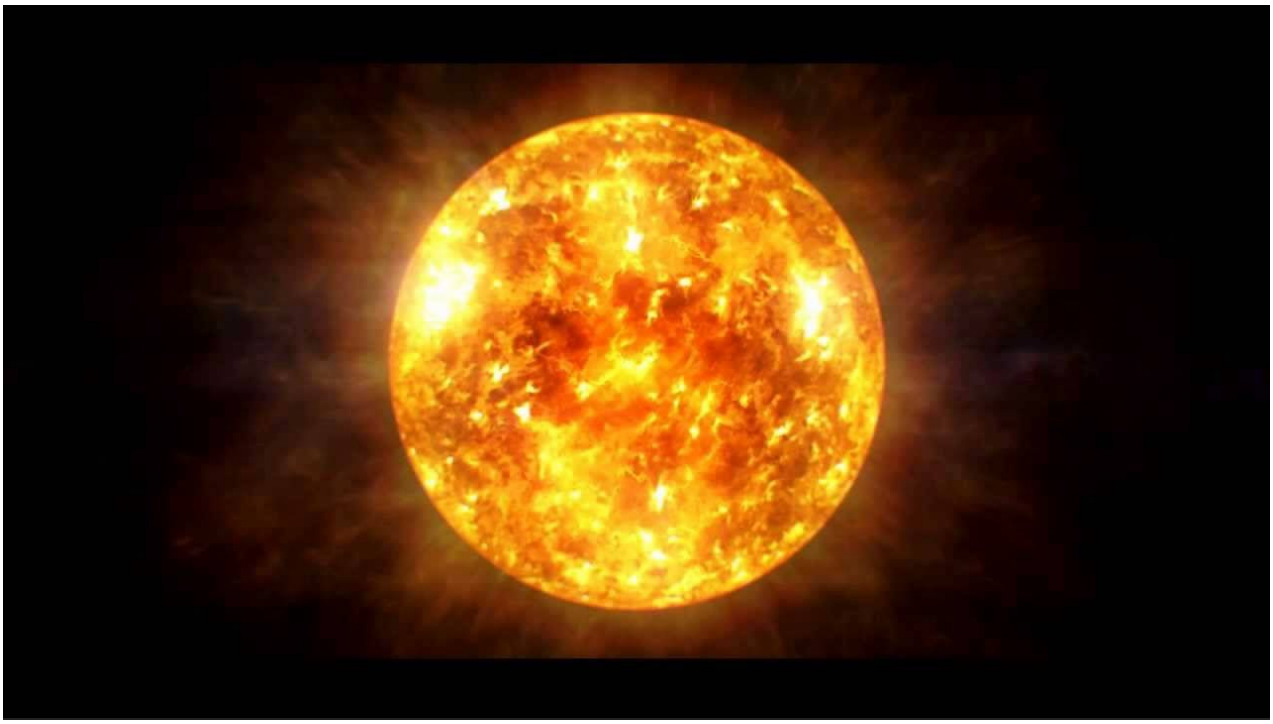
Some problems are solving themselves. The population problem has not turned into the disaster predicted by the doom and gloom crowd of the 1960s. Education and economic development have put the brakes on the population explosion. As Swedish statistician Hans Rosling explained in the outstanding BBC program on “Over Populated,” most families now have only two children.[8] As more people become educated, the population growth will eventually stabilize and is already reversing in the developing world. Many countries in Europe have negative population growth, as does Japan and Russia.[9]

A future that works requires an understanding that humans are a tiny part of creation. We are not creation. As we protect the two-legged ones, the four-legged ones, those who crawl in the sands, swim in the waters and fly in the skies, humans and the natural world will survive and life will spread to other worlds in other solar systems.

A future that works is going to require us to coordinate our science and medicine to stop the global pandemic. We have to stop killing the animals. It is not a choice.

Chapter Twenty One

A Practical Climate Change Solution
DABAI



The Federal government and to the Native American communities and indigenous groups internationally can solve many of the environmental problems created by climate change by building solar power plants on indigenous lands. We propose using the extra land base for the raising of bison and other indigenous animals as an alternative to beef to change the American diet which also contributes to climate change.

The reality of climate change is settled science. For those who would question this scientific reality: the glaciers are melting. Humans cannot continue to dump over 44 billion tons of CO_2 into the atmosphere and not have negative environmental consequences.

The indigenous communities globally did not create these problems of the destruction of wildlife, collapse of the aquifers, overfishing, population growth, destruction of the rain forests, and the numerous other environmental problems facing our small planet. The indigenous communities have lived in harmony with the natural world for thousands of years.

In the United States, the Bureau of Land Management has Federal land next to numerous Native American reservations. Some of these lands can be returned to the indigenous communities who understood how-to live-in harmony with the natural world.

The rain forest needs to be returned to the indigenous tribes who have lived there for thousands of years. The indigenous communities are the canaries in the coal mine. The modern world will either listen to the elders of the indigenous communities or life on our small planet will die.

The Climate Change Problem

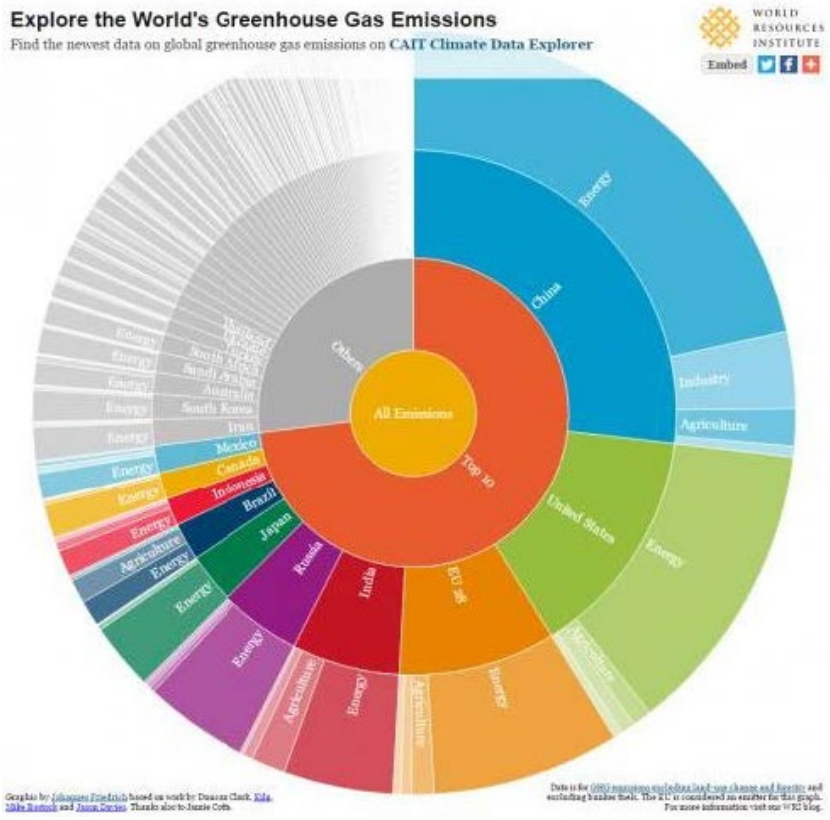
Much has been written and extensive scientific research has been done on fossil fuels and the effect on climate. The misinformation campaign of the fossil fuel industry[1] cannot overcome the massive amount of scientific data from scientists all over the world.[2] It is not that complex. But it does require a careful study of the scientific data to properly understand this history changing environmental problem. The United Nations' Intergovernmental Panel on Climate Change has just issued their latest and most alarming report. Global climate change is taking place faster than expected.[3]

That human cause climate change can be understood by taking a glass of whatever liquid you have in front of you or some hard substance. Lower the glass or hard substance to table level as if it was oil, natural gas or coal and under the ground. When we take the fossil fuel out of the ground and burn it, the CO_2 waste is trapped in the atmosphere. The sunlight keeps the planet too warm because of the CO_2 waste particles. Since industrialization over the last 150 years, using fossil fuels to produce energy has heated the planet.[4]

Coupled with population growth, the wildlife on land and in the oceans is being decimated. We are in uncharted territory as humans are dumping CO_2 into the atmosphere faster than nature can absorb it.[5]

How much trouble are we in? Future generations are in big trouble. It will continue to get warmer. Hurricanes will be more intense. As the oceans warm, this will

add more power to storms. To add to humanities' problems, the aquifers are drying up and drought will become more common. Climate change will flood entire nations and cause millions of refugees.[6] If you think we have problems with immigration and refugees now, just wait until the glaciers melt and hundreds of millions of people are displaced and seek shelter in the nations that caused the climate change. Humanity is at a crossroads. We must face reality.

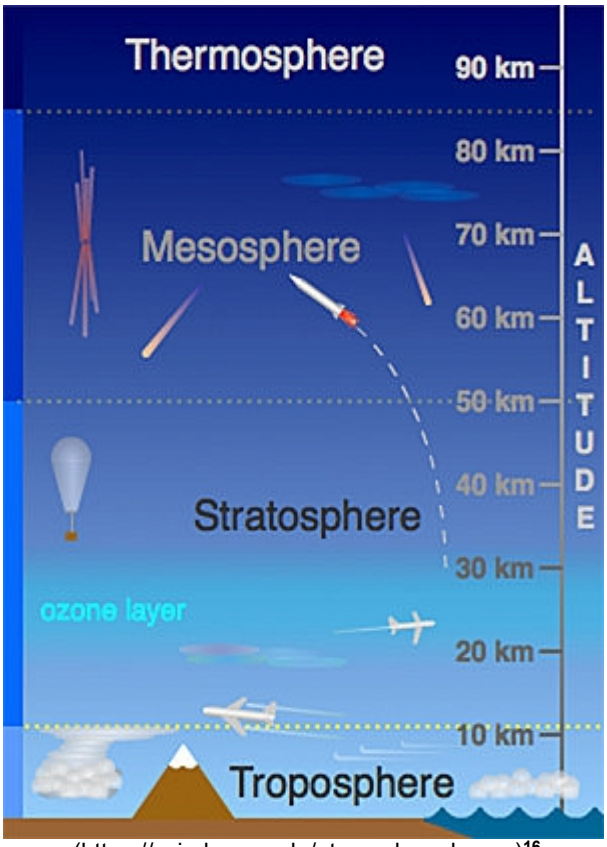


Three countries emit more than half of the world's greenhouse gases. Graphic by World Resources Institute[7]

If we do not immediately address the reality of climate change, the future will be very grim. There will be political turmoil as millions seek refuge. Numerous species will continue to decline if not become extinct altogether. The coastal cities worldwide will be underwater from the melting of the icecaps. Agriculture depends on stable climate. As the weather becomes more unstable, crop yields will decline, and mass starvation is a real possibility. This is happening because humans are dumping over 40 billion tons of CO2 in the atmosphere.[8]

The world depends on fossil fuels to have a modern society. From the cars and trucks we drive to the food we eat, to the homes we heat—fossil fuels have enabled 7.69 billion people to live on a tiny planet.[9] Add one million more people every four days,[10] the continued consumption of over 100 million barrels of oil per day,[11] collapse of the fisheries,[12] dead zones from pollution in every river emptying into the oceans[13]-

we are in serious trouble. If the glaciers continue to melt, ocean levels will rise by over 80 feet within 100 years.[14]



(https://scied.ucar.edu/atmosphere-layers)[16]

The 100 million barrels of oil consumed each day[15] goes up into the atmosphere as CO_2 air pollution. As the atmosphere is very thin and fragile, the CO_2 builds up there and prevents ultra violet light from going back into space. Consequently, heat is trapped in the Earth and warming occurs. The heating of the Earth is taking place at a rate not seen in modern history. The extensive use of fossil fuels can be changed to a clean and reliable source of endless energy. It can also be done fairly quickly. Converting the energy system of the planet to solar and nuclear power will prevent fossil fuel pollution from entering the atmosphere.

This change in the energy system of the United States is only going to take place with leadership from the indigenous communities, namely the great Native American nations that once owned all of this land. Change in energy policy has to be pursued immediately. Fifty years is not a long time and the continued pollution of fossil fuels will destroy all of creation. Native Americans must lead.

How can we be certain this will happen and how fast? We only have the past as a guide. The increase in CO_2 in the atmosphere can be measured.[17] The study of past climate changes in the ice cores reveals that every time the CO_2 in the atmosphere rises, there is a rise in temperature and a rise in sea level.[18]

Every crisis creates an opportunity. The Native Americans and other indigenous communities have coexisted with the natural world for centuries. Before the European invasion resulted in the deaths of the majority of Native Americans in one of history's largest genocides[19], there were no major environmental problems. But there was no modern world. Life was short, hard and often very violent.

This problem of climate change caused by fossil fuels to power our modern industrial world can be solved with an alternative source of energy that is clean, reliable and affordable. It is called the sun.

SOLAR POWER ON INDIAN RESERVATIONS
AS A PARTIAL SOLUTION TO CLIMATE CHANGE

The present air pollution problems have been caused by the use of fossil fuels over the last 150 years.[20] Since the invention of the steam engine and using coal for industrial processes, the modern world has constantly increased their use of fossil fuels. The result has been climate change. But there is a solution. Tribes and the indigenous communities globally can be a big part of a partial solution to climate change and numerous other health and environmental problems.

One climate change solution is giving Tribes back some of their land and to build solar power plants on Native American Reservations. Whether all Native American tribes go along and become part of this solution or not, the rest of the world is going solar. Solar power is the fastest growing energy source on the planet.[21]

The rest of the world is going with solar power.[22] China, India, the European Union—solar has arrived. The five largest solar power plants are not in the United States. They are in China and India.[23]

What is happening is the United States is being left behind technologically. It is like insisting on using antiquated technology because of political contributions from the buggy whip and wagon wheel industry. Therefore, relying on horsepower would make America great again. This is what is happening with coal power to create electricity. They mythology is there is “clean coal”, yet no science supports this ridiculous proposition as a solution to climate change. Using coal to create electricity is an environmental disaster.[24]

This unwillingness to properly address the problems created by the extensive use of fossil fuels and the resulting CO_2 air pollution is not only harming the environment, it is leaving America behind technologically. We will be competing in this century with the last century's energy and technology system.

China and the United States are the biggest sources of fossil fuel pollution.[25] China has signed the Paris Climate Accord and is determined to clean up their polluted cities.[26] The Chinese and the Indians are committed to expanding their use of solar power[27]

Kamuthi Solar Power Project – 648MW – India

This massive solar power plant is is a photovoltaic power station spread over an area of 2,500 acres (10 km^2) in Kamuthi, Ramanathapuram district, 90 km from Madurai, in the state of Tamil Nadu, India. The project was commissioned by ·Adani Power With a generating capacity of 648 MW at a single location, it is the world's eighth largest (as of 2018) solar park.[28]

Longyangxia Dam Solar Park – 850MW – China[29]

Tengger Desert Solar Park – 1500MW – China[30]

The 1547MW solar power was installed in Zhongwei, Ningxia is the world's largest solar array by far. Known as the "Great Wall of Solar" in China. The Tengger Desert is an arid natural region that covers about 36,700 km and is mostly in the Inner Mongolia Autonomous Region in China. The solar field itself covers 1,200 Km (3.2%) of land.[31]

Waldpolenz Solar Park, Germany

The Germans have had a reputation for engineering since the dawn of the industrial age. From high performing cars to Panzer tanks and V2 bombers that terrified allies in World War II, the Germans have achieved with peace what was impossible to gain with war. They are the world's fourth largest economy and the economic engine for the European Union.

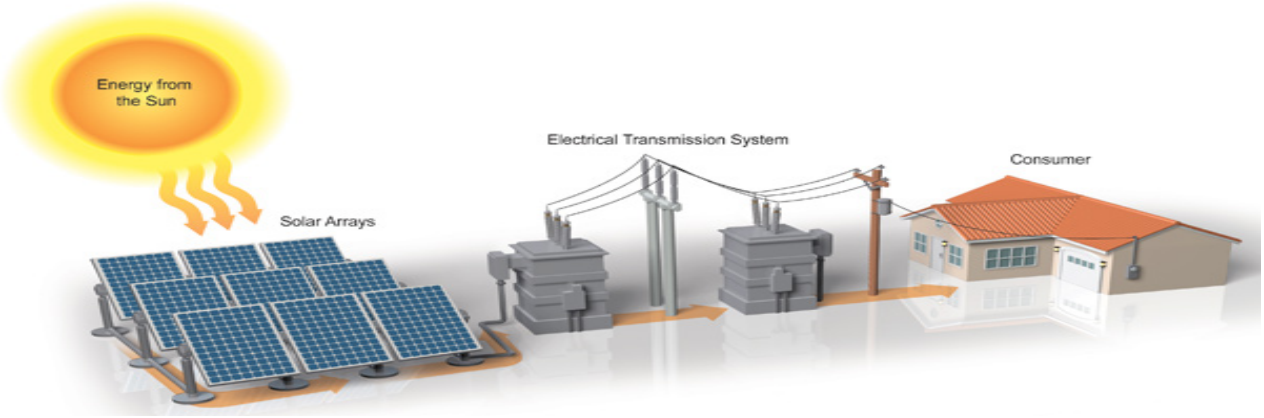
Waldpolenz Solar Park, which is the world's largest thin-film photovoltaic (PV) power system, is built in on military air base to the east of Leipzig in Germany. The power plant is a 40-megawatt solar power system using state-of-the-art thin film technology.[32]

HOW SOLAR POWER WORKS

Solar power plants are standard off the shelf technology. There are various types of solar power plants.[33] Solar-Thermal plants work like this: Solar collectors capture and concentrate sunlight to heat a synthetic oil called therminol, which then heats water to create steam. The steam is piped to an onsite turbine-generator to produce electricity, which is then transmitted over power lines.[34]

There are two ways we can produce electricity from the sun:
Photovoltaic Electricity – This method uses photovoltaic cells that absorb the direct sunlight just like the solar cells you see on some calculators.[35]
Solar-Thermal Electricity – This also uses a solar collector: it has a mirrored surface that reflects the sunlight onto a receiver that heats up a liquid. This heated liquid is used to make steam that produces electricity.[36]

Photovoltaic solar plants work like this:[37]



Photovoltaic solar plants work like this: Solar collectors capture and concentrate sunlight to heat a synthetic oil called therminol, which then heats water to create steam. The steam is piped to an onsite turbine-generator to produce electricity, which is then transmitted over power lines. On cloudy days, the plant has a supplementary natural gas boiler. The plant can burn natural gas to heat the water, creating steam to generate electricity. Solar energy works by capturing the sun's energy and turning it into electricity for your home or business.[38]

Our sun is a natural nuclear reactor. It releases tiny packets of energy called photons, which travel the 93 million miles from the sun to Earth in about 8.5 minutes. Every hour, enough photons impact our planet to generate enough solar energy to theoretically satisfy global energy needs for an entire year.[39]

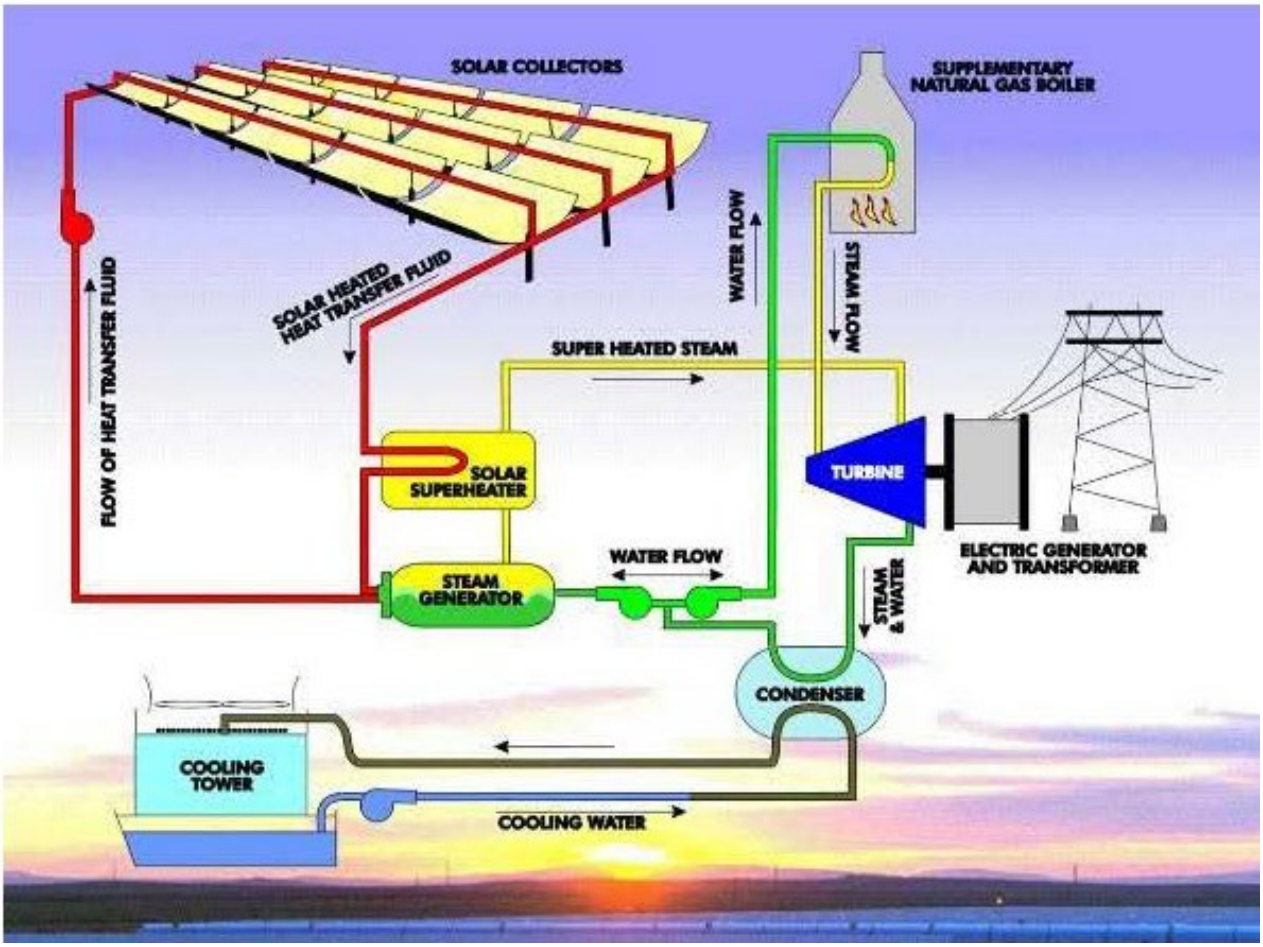
Currently photovoltaic power accounts for only five-tenths of one percent of the energy consumed in the United States. But solar technology is improving and the cost of going solar is dropping rapidly, so our ability to harness the sun's abundance of energy is on the rise.[40]

A 2017 report from the International Energy Agency shows that solar has become the world's fastest-growing source of power – marking the first time that solar energy's growth has surpassed that of all other fuels. In the coming years, we will all enjoy the benefits of solar-generated electricity.[41]

Unlike other sources of power, solar is continuous and does not pollute. Fossil fuel industries will continue to pollute until they either are stopped by new technologies or the ecosystems collapse from the consequences of climate change.

How Do Solar Panels Work?

When photons hit a solar cell, they knock electrons loose from their atoms. If conductors are attached to the positive and negative sides of a cell, it forms an electrical circuit. When electrons flow through such a circuit, they generate electricity. Multiple cells make up a solar panel, and multiple panels (modules) can be wired together to form a solar array. The more panels you can deploy, the more energy you can expect to generate.[42]

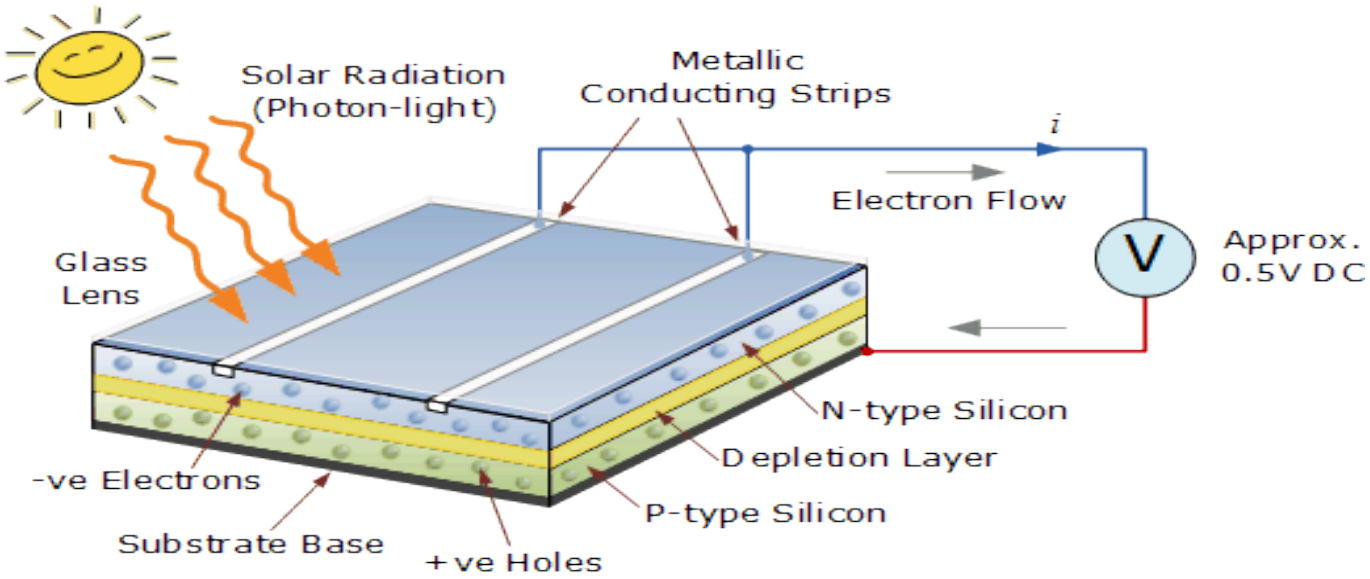


What are Solar Panels Made of?

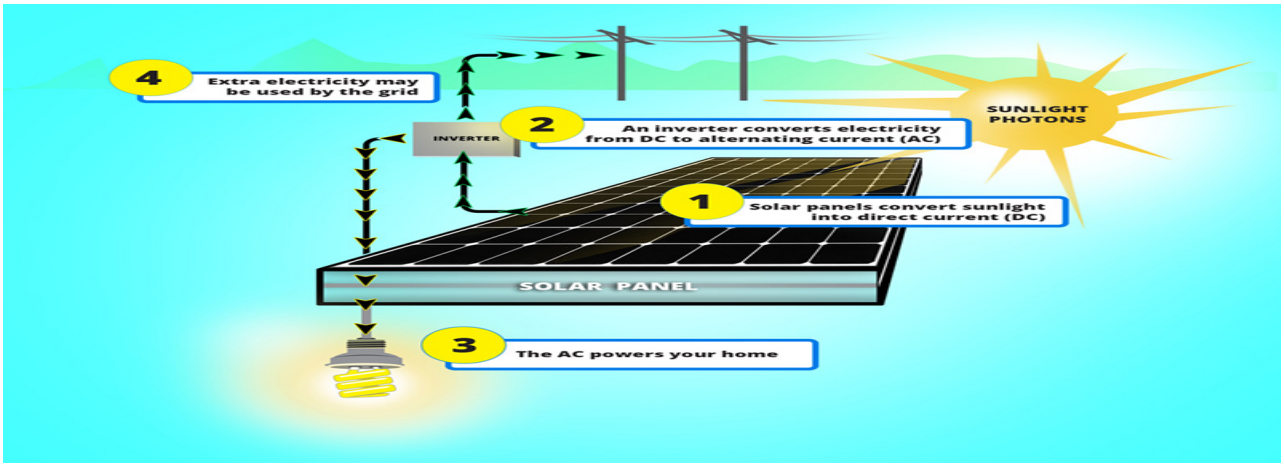
Photovoltaic (PV) solar panels are made up of many solar cells. Solar cells are made of silicon, like semiconductors. They are constructed with a positive layer and a negative layer, which together create an electric field, just like in a battery.[43]

How Do Solar Panels Generate Electricity?

PV solar panels generate direct current (DC) electricity. With DC electricity, electrons flow in one direction around a circuit. This example shows a battery powering a light bulb. The electrons move from the negative side of the battery, through the lamp, and return to the positive side of the battery.[44]



With AC (alternating current) electricity, electrons are pushed and pulled, periodically reversing direction, much like the cylinder of a car's engine. Generators create AC electricity when a coil of wire is spun next to a magnet. Many different energy sources can "turn the handle" of this generator, such as gas or diesel fuel, hydroelectricity, nuclear, coal, wind, or solar. AC electricity was chosen for the U.S. electrical power grid, primarily because it is less expensive to transmit over long distances. However, solar panels create DC electricity. How do we get DC electricity into the AC grid? We use an inverter.[45]



Sunpower.com at: https://us.sunpower.com/blog/2017/10/25/how-does-solar-energy-work/

EXPANDING RESERVATION LANDS AND BUILD SOLAR POWER PLANTS

Unlike states, tribes have to go into business. Their tax base from just taxing their few members is too small to run government operations. With small populations and few resources, tribes have gone into a variety of businesses. Indian gaming, smoke shops, jewelry, mining, bison and cattle ranching, lumber enterprises, oil and gas operations when these resources are available, and a variety of businesses fund tribal operations. Building solar power plants and selling the power to help solve the global climate change is a natural fit for Native Americans. One tribe, the Southern Paiutes have done exactly what is being proposed in this proposal.

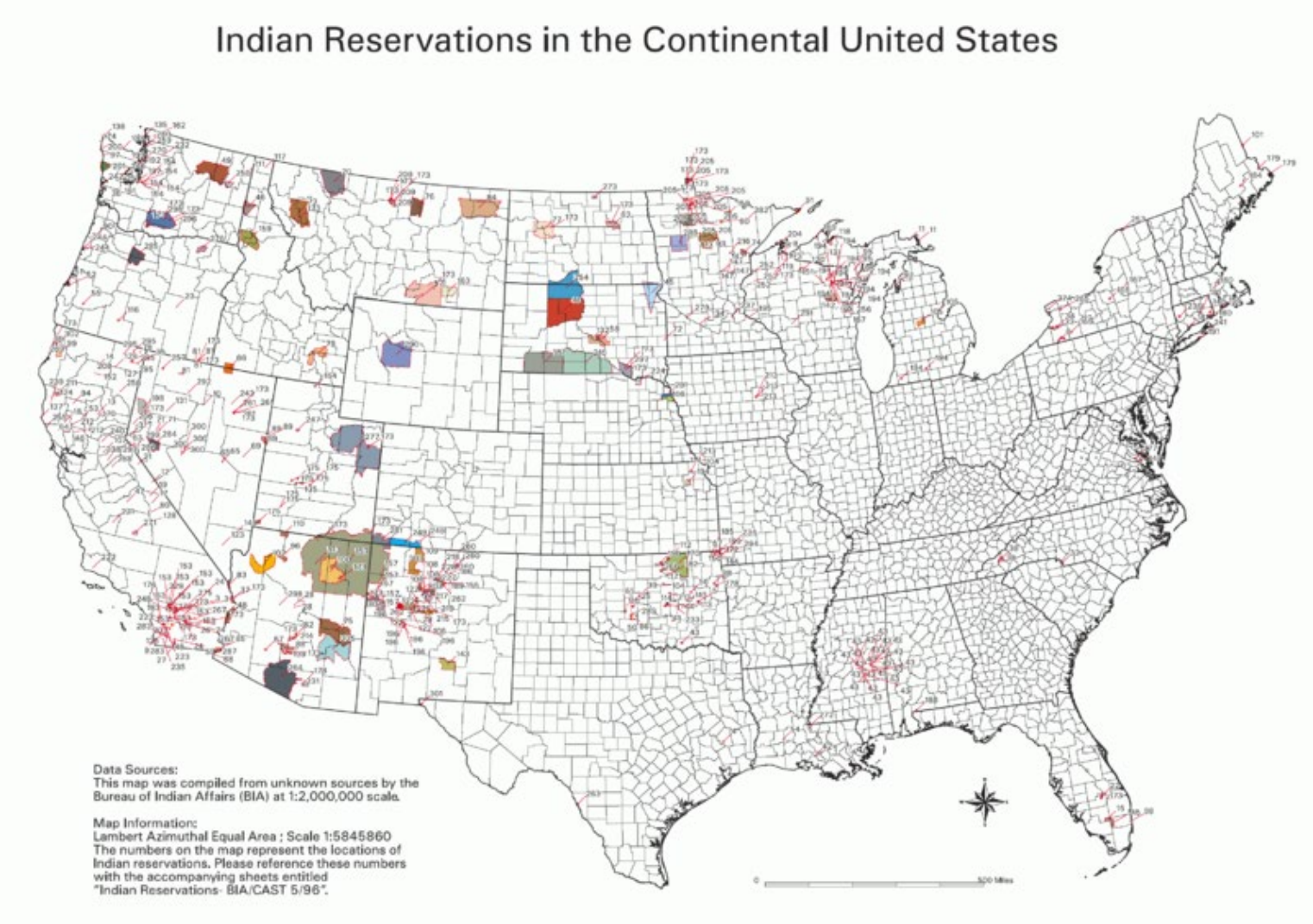
The Moapa Southern Paiute Solar Project is a 250 megawatt (MW) alternating current (AC) solar project located on approximately 2,000 acres on the Moapa River Indian Reservation in Clark County, Nevada. Capital Dynamics is the project owner and constructed the project using First Solar' advanced photovoltaic (PV) thin film solar modules.[46]

The project generates enough clean solar energy to serve the needs of about 111,000 homes per year, displacing approximately 341,000 metric tons of carbon dioxide (CO_2) annually—the equivalent of taking about 73,000 cars off the road. The Project includes an onsite substation and a new 5.5 mile 500 kV transmission line that connecting the Project to the existing Crystal Substation serving energy users in California. Moapa Southern Paiute Solar Project has a Power Purchase Agreement with the Los Angeles Department of Water and Power to deliver clean, solar energy for 25 years.[47]

Project Benefits

- Generates millions in income for the Moapa Band of Paiutes from lease payments, consulting fees, and the purchase of goods and services
- Generated wages and benefits for approximately 600 construction jobs at peak construction and up to five ongoing operation and maintenance positions
- Increases state and local tax revenues
- Provide educational donations for the Tribe
- Indirectly benefits dozens of businesses in Clark County[48]

Building solar power plant on Native American land can be accomplished in fairly short order, absent extraordinary events usually within two to three years. This is standard off the shelf technology and solar power plants are being built all over the world. Clearly the benefits of solar power for electrical production make it the best source of energy on the planet.



In Native American culture, a social decision has to be looked at its impact for seven generations. This is interpreted by Vine Deloria, Jr. in non-romantic practical terms. The decision has to consider the great grandparents, grandparents, parents, the present generation, the children, grandchildren and great grandchildren.[49] In other words, you consider the past, those who have been here before us as well as the future.[50]

If what is proposed is not safe for seven generations, don't do it. If that standard had been applied across the board to the entire planet, we would not have the massive environmental problems we are facing today.

ENVIRONMENTAL PROBLEMS CREATED BY ENERGY PRODUCTION

Hydro power has destroyed the traditional salmon runs in the Western United States. Virtually every river and stream in the United States has been dammed up and

the ecology has been altered. The basic reality of life is, damming up rivers to produce electricity is an environmental disaster. Many of these dams are older and a danger to those downstream. Instead of being replaced, they need to be dismantled and the ecosystem needs to be restored to its natural state. This move will restore salmon runs and immensely improve the ecosystems that were healthy before being altered to produce electricity.[51]

As the Union of Concerned Scientists observed about the environmental damage caused by hydroelectric dams:

The size of the reservoir created by a hydroelectric project can vary widely depending largely on the size of the hydroelectric generators and the topography of the land. Hydroelectric plants in flat areas tend to require much more land than those in hilly areas or canyons where deeper reservoirs can hold more volume of water in a smaller space.

At one extreme, the large Balbina hydroelectric plant, which was built in a flat area of Brazil, flooded 2,360 square kilometers—an area the size of Delaware—and it provides only 250 MW of power generating capacity (equal to over 2,000 acres per MW). In contrast, a small 10 MW run-of-the-river plant in a hilly location can use as little 2.5 acres (equal to a quarter of an acre per MW).

Flooding land for a hydroelectric reservoir has an extreme environmental impact: it destroys forest, wildlife habitat, agricultural land, and scenic lands. Often, such as the Three Gorges Dam in China, entire communities have also had to be relocated to make way for reservoirs.

WILDLIFE IMPACTS

Dammed reservoirs are used for multiple purposes, such as agricultural irrigation, flood control, and recreation, so not all wildlife impacts associated with dams can be directly attributed to hydroelectric power. However, hydroelectric facilities can still have a major impact on aquatic ecosystems. For example, though there are a variety of methods to minimize the impact (including fish ladders and in-take screens), fish and other organisms can be injured and killed by turbine blades.

Apart from direct contact, there can also be wildlife impacts both within the dammed reservoirs and downstream from the facility. Reservoir water is usually more stagnant than normal river water. As a result, the reservoir will have higher than normal amounts of sediments and nutrients, which can cultivate an excess of algae and other aquatic weeds. These weeds can crowd out other river animal and plant-life, and they must be controlled through manual harvesting or by introducing fish that eat these plants. In addition, water is lost through evaporation in dammed reservoirs at a much higher rate than in flowing rivers.

In addition, if too much water is stored behind the reservoir, segments of the river downstream from the reservoir can dry out. Thus, most hydroelectric operators are required to release a minimum amount of water at certain times of year. If not released appropriately, water levels downstream will drop and animal and plant life can be harmed. In addition, reservoir water is typically low in dissolved oxygen and colder than normal river water. When this water is released, it could have negative impacts on downstream plants and animals. To mitigate these impacts, aerating turbines can be installed to increase dissolved oxygen and multi-level water intakes can help ensure that water released from the reservoir comes from all levels of the reservoir, rather than just the bottom (which is the coldest and has the lowest dissolved oxygen)."[52]

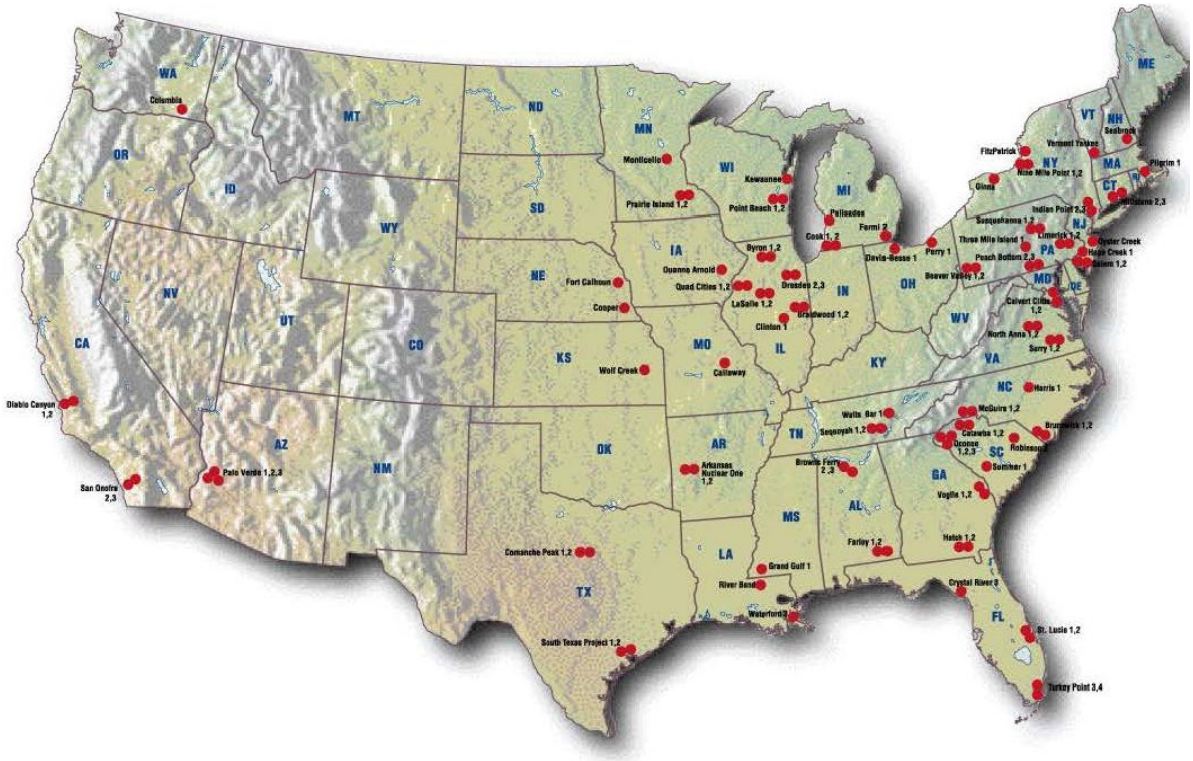
Hydroelectric power has caused tremendous damage to the planet. These dams were built in the last century to provide electricity and water for agriculture. But the benefits are far outweighed by the environmental damage done to land use and wildlife.

Nuclear power provides electricity to approximately 30 percent of the United States. The 98 power plants in 34 states and 72 communities provide jobs and power without air pollution.[53] Like all new technologies there is an environmental impact. And

there have been some very serious accidents. These are well known and much has been written about Fukushima, Chernobyl, and Three Mile Island.[54]

The biggest problem with nuclear power for electrical generation is what can be done with the low, intermediate and high-level waste. Burial in Utah's West Desert is taking place for the low and intermediate waste.[54] There is no long-term solution to the disposal of the high-level waste. The fuel rods will remain radioactive for at least 250,000 years.[55] They need to be properly stored until the nation can wean itself off nuclear power.[56]

This clearly can be done safely. We need to vastly expand our nuclear power capability. The fear of nuclear power has been driven by hysteria and a lack of knowledge of science. There is no question that Three Mile Island, Chernobyl, and most recently Fukushima bring public images of radiation destroying the surrounding communities. Clearly nuclear power is new to history. So is the production of electricity, the use of fossil fuels, jet travel and our limited forays into outer space. We did not stop producing automobiles when we had people killed in car wrecks. Air travel continued despite the fact that there were numerous crashes early on. We lost large passenger cruise ships like the Titanic but ship building continues. Without X-rays, C-T scans, MRIs and radioactive testing of pharmaceutical drugs, we would not have modern medicine. The hysteria on the left against nuclear power is not science. It needs to end but the concerns have to be properly addressed. These concerns are being ignored until the next accident.



According to Bryan Dolan of Duke Energy, the fuel rods are just stored next to the reactors. There is no national policy that is working to take the spent fuel rods.

> All told, the nuclear reactors in the U.S. produce over 2,000 metric tons of radioactive waste a year, according to the DoE—and most of it sits on-site because there is nowhere else to put it. "When we remove fuel from the core after its final usage, we store it in a pool on site. We have the capacity to store it there for many years," says Bryan Dolan, vice president of nuclear development at Duke Energy Corp., which operates three nuclear power plants in South Carolina. The space required to store it, is "incredibly small."[57]

In the short run, at least the next 50 years, nuclear power has to remain an important part of the national energy mix. It is not realistic to just shut down the nation's nuclear power plants without a substitute for this important energy source. Nuclear power is safer than coal mining and can clearly help solve the climate change problem created by fossil fuels.

Our national energy policy is in such disarray there is no politically viable long-term solution to the storage of the spent nuclear fuel that comes out of reactors. Nuclear power continues to be an important source of energy and coupled with solar power; it can be a very useful though partial solution to the massive environmental problems of climate change caused by the use of fossil fuel.

Some of the coal fired power plants can be converted to nuclear power as the infrastructure is already there minus the reactors and the spent fuel. If managed properly, nuclear power must be looked at in the short run as a serious partial solution to reducing the world's massive use of fossil fuels. There are tradeoffs. As Skye Worthen observes, "In the short run, 30-50 years, humans get electricity. But it comes with a huge environmental cost. The fuel remains highly radioactive for over 250,000 years."[58]

Mr. Worthen is right. We get skies clear of fossil fuel emissions. But these highly poisonous spent fuel rods are still there out of sight out of mind in a storage facility away from populated centers. The Earth is constantly changing. What happens when population centers reach these isolated areas full of spent nuclear fuel? Do we potentially poison future generations so people can brush their teeth with an electric toothbrush? It would be interesting to see the look on the face of the bureaucrat who signs off on the license to the permanent storage facility.

Coal fired power plants are an environmental disaster.[59] The data is overwhelming on the environmental damage caused by coal to produce electricity. Notwithstanding the clear and convincing data regarding this damage, politicians continue to rely on this energy source to produce electricity. Too often we have discovered that using a product or method of doing something is not safe. We no longer use lead in pipes or asbestos to insulate buildings because we discovered it was a public health hazard. Besides black lung disease and air pollution including acid rain,

coal mining is on its way out. Other energy sources are less expensive and do not cause the air pollution and health problems created by coal.

TRANSPORTATION

Except for jets, we can convert the entire global transportation system to electric vehicles. Several companies are producing electric vehicles, and more are entering this market. This is standard off the shelf technology. Some of these electric vehicles like the Tesla automobiles are rated among the best cars on the market.

More automakers are entering the electric vehicle market. Electric vehicles have fewer moving parts than gas and diesel cars and trucks. China is once again leading the way in number of and use of electric vehicles. Manufacturing economics is so costs of electric vehicles will continue to go down. The price of solar power is going down and with it, the conversion of the planet to solar power will continue. According to EV volumes.com:

"The by far largest growth contributor is China, where we expect sales to increase by over 500 000 units to 1,1 million in 2018. The long-awaited Tesla Model-3 will contribute with over 130 000 additional units this year. With deliveries still restricted to USA and Canada in 2018, the Model-3 already was the world's bestselling EV of all categories in June, July, much likely in August and in many months to come. It will completely dominate the North American plug-in vehicle market from now on."[60]

The United States will be left behind by history if it does not convert its energy system to sustainable reliable renewable solar power. Tribes can be at the forefront of helping to solve this climate change environmental problem by acquiring more land and building solar power plants.

THE TRIBES AND UTILITY COMPANIES NEED TO WORK TOGETHER

The utility companies need to work with Indian tribes and build power transmission lines where they do not exist. This will enable the Native American community to sell the power from the solar power plants directly to the national grid. In the West, Native American reservations are in isolated areas far from major urban centers. Most of these reservations are surrounded by Federal land. The Federal government, the Tribes and the utility companies can pay for these transmission lines by issuing bonds to fund the project. The bonds can be secured by the long-term contracts on electrical generation.

Given the urgency of transforming the national grid from fossil fuels and other environmentally damaging sources to solar power, these bonds can be issued and sold immediately. The public will buy the bonds because people are very concerned about the future of their children and this planet. Climate change, despite the disinformation campaign by the fossil fuels industry, is viewed as a significant political problem by the public.

BUILD SOLAR POWER ALONG THE INTERSTATE HIGHWAYS

We have an excellent opportunity to take the world on a new direction. Under the leadership of one of America's greatest president' Dwight D. Eisenhower signed the Federal Aid Highway Act of 1956, popularly known as the National Interstate and Defense Highways Act, (PL 84-627). It was the largest public works project in American history through that time.[61]

Using the extensive network of highways that crisscross this great country, we can build solar power panels all along this massive system and have charging systems at the rest stops. The reason this can be done efficiently is because these highways already have the land. The easements exist and the infrastructure is there. Having charging stations at the rest stops nationally will mean we can transform our economy from extensive use of fossil fuels to electric vehicles in short order.

To make this transition and foster more global cooperation, allow foreign companies to bid on these solar power systems. In a interconnected world, we have to foster more cooperation, not less. Climate change is a global problem, not one that can be resolved any one society. We are a global community and we need to work together on solving planetary problems. Demonizing other cultures may have worked in the 1930s but this behavior is not acceptable today. In an interconnected planet, climate change is global and local. As a species, we will work together by necessity as we all have a vested interest in survival.

Building solar panels all along the national highway system works. The Federal government owns the land. Thus, there is not the problem with easements and condemnation proceedings normally required in public works projects. The groundwork, the land and the laws are already in place. Now we just need the political will.

This interstate highway system brought freedom to millions of people. It created a dynamic country of numerous industries that depended on car purchases. There was the massive fuel industry that supported the automotive industry. There was the tire industries and related small companies that provided parts, and labor for automotive and fossil fuels industry. There were the home purchases from people being able to live in suburbs and travel to large cities. For six decades, this system of dependence on fossil fuels, the automotive industry and related industries, the society functioned. Climate change and the virus has changed this behavior. We cannot continue on the present path.

These rest stops have power going to them. By building solar panels along the highway and/or windmills, the rest stops can be used as charging stations. The entire project can be accomplished within five to ten years. This is all off the shelf technology which will only improve as it is implemented nationally and internationally. To succeed, we must provide the public with a rational alternative to fossil fuels. We cannot just demonize oil companies. We must give their workers and executives alternatives.

USE OF INDIGENOUS FOODS TO OFFSET CLIMATE CHANGE

The industrial production of cattle is an environmental hazard that contributes heavily to CO_2. It takes on average over 460 gallons of water to produce one pound of beef.[62] Cattle are not natural to this hemisphere. The industrial farming of pork, chicken and beef creates huge waste problems in addition to methane. These foods are not healthy and the extensive use of growth hormones and antibiotics as well as processed foods have created a very unhealthy nation. Factory farming of pork, chicken and beef is an environmental and health care disaster.[63]

Because of our poor diet, obesity is the number one public health problem for the United States and the Native American community.[64] The diet has to change to a high protein low fat, non- processed foods; the diet used by the Native American community for centuries. Presently there are approximately 500,000 bison in the United States.[65] Converting to bison and lowering our consumption of beef, chicken and pork will require a major change in agriculture. The bison herds will need to be increased to 40 million like they were before the European invasion. This will provide opportunities to ranchers, Indian tribes and all involved in making a major change.

As the Tribes get back more of their land for solar power plants, this additional land space can raise bison which are indigenous to most parts of North America. Unlike

cattle that are not natural to this part of the world, bison are not only a healthier source of protein, they are far better for the environment.

Other indigenous communities globally need to do the same thing. Go with indigenous foods produced locally to lower the carbon footprint from importing and exporting over long distances so people can have more food choices. The carbon footprint to import seafood caught off the coast of Africa, processed by China and sold at a Kroger grocery store is simply not sustainable. Besides changing our energy production system worldwide, we need to change our diet. Solar power plants can be built on reservations as a partial solution to the climate change problem created by a national policy favoring the use of fossil fuels.

The fossil fuel industry knows about the problems created by their product. Like the tobacco industry, they hid the data of the environmental damage from the public. To keep their profits, they have actively engaged in a disinformation campaign, given millions of dollars to politicians to continue to destroy the environment.

The only constant in life is change. The world changed from horse and wind power to coal and oil. Now the world needs to move on to new, cleaner technologies. Working with the indigenous communities globally and with the utility companies and food producers and distributors, we can solve the environmental problems facing our tiny planet. Technology created the climate change problem. Ingenuity and cooperation can solve it.

This fossil fuels problem can be solved in ten years by simply converting our entire energy grid to clean renewable solar and wind power and incorporating nuclear power. While the modern world in part originated as a result of the various industries created using fossil fuels, this time in history has passed. We need to move on to the post fossil fuel era. We need to create a new and more modern world of solar, wind, wave and nuclear energy.

The indigenous communities globally need to lead the world away from fossil fuels. We do not have another planet we can migrate to when we destroy this one. We can take the thousands of years of knowledge in co-existing with the natural world of the indigenous communities worldwide and incorporate it to the modern world. From the rain forests of the Amazon to the plains of the United States, we can co-exist with nature and bring the wildlife back.

Chapter Twenty Two

What About Work? Life in the Post Virus World.

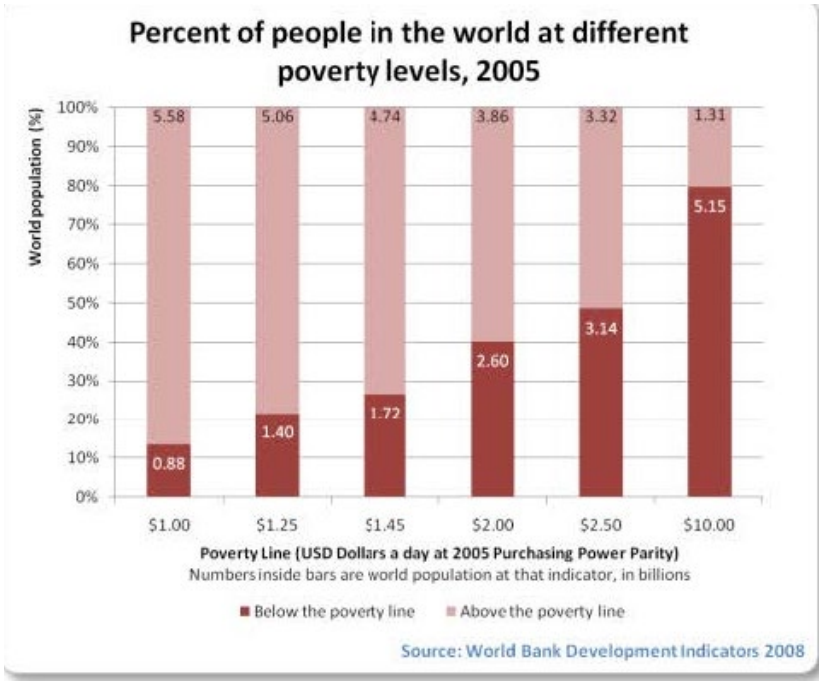
"Aren't you concerned you have lost your freedom of speech?"
"I don't want to give a speech. I have a job."
-Conversation between British reporter and German worker 1939

There is plenty of work now and there will be even more in your future. Look at the mess we have created on our small planet and the cleanup required to make it habitable for humans, plants and animals. Every river on the planet needs to be cleaned of old tires, garbage on the banks, industrial waste dumped and missing trees. Virtually every river delta that empties into the oceans have dead zones.[1] The waste streams are the symptom. Our consumerism/materialism way of life is the problem.

It took 150 years to get where we are with the waste dumps and plastic from our failed consumption model. This crisis creates an excellent opportunity to start entire new industries. Cleanup is labor intensive work. We must find new uses for the plastic, metal, glass and paper we dumped all over the world.

This is doable. In a world where five billion people are poor and their countries have very terrible hygiene, there is plenty to do. Being poor is understandable. But having to live in garbage filled communities is not acceptable. This garbage did not exist 200 years ago. To understand how to clean up municipal solid waste, industrial pollution, we have to carefully study these waste streams. We cannot possibly clean up what we do not understand and the history behind this poverty.

Numerous studies have been done all over the world on what is “poverty” and the means to reduce poverty worldwide.[2] There is no clear global consensus on who is and who is not “poor”. We make life far more complex than it is. If you have good physical and mental health, family and friends that love you and add a little sunshine, you are “rich. All the rest of it is just optics.



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The jobs in this century are in cleaning up the planet. The work required to clean up every dead zones that empty from every river into every ocean will create jobs for millions of people. The result is a cleaner planet and the return of marine life to feed you.

This cleanup of the planet will create millions of new businesses. They in turn will hire millions of people. The damage we have done is reversible. As we discussed earlier and according to Kenyan writer Victor Kiprop:

> “A dead zone or hypoxic zone is an area in the ocean that cannot support animal life because of low concentration of oxygen. Dead zones are also found in lakes and rivers. Hypoxic zones are caused by the excessive bloom of algae which deplete oxygen concentration in water.”

Causes of Hypoxic Zones

Dead zones can occur naturally, but most are caused by human activity especially the dumping of chemicals such as agricultural fertilizer, sewage, and industrial waste. The disposal of these nutrients into the ocean allows for the rapid boom of algae. Agricultural fertilizer is the largest cause of hypoxic zones as it causes algae blooms. When the algae dies, it sinks to the floor of the ocean

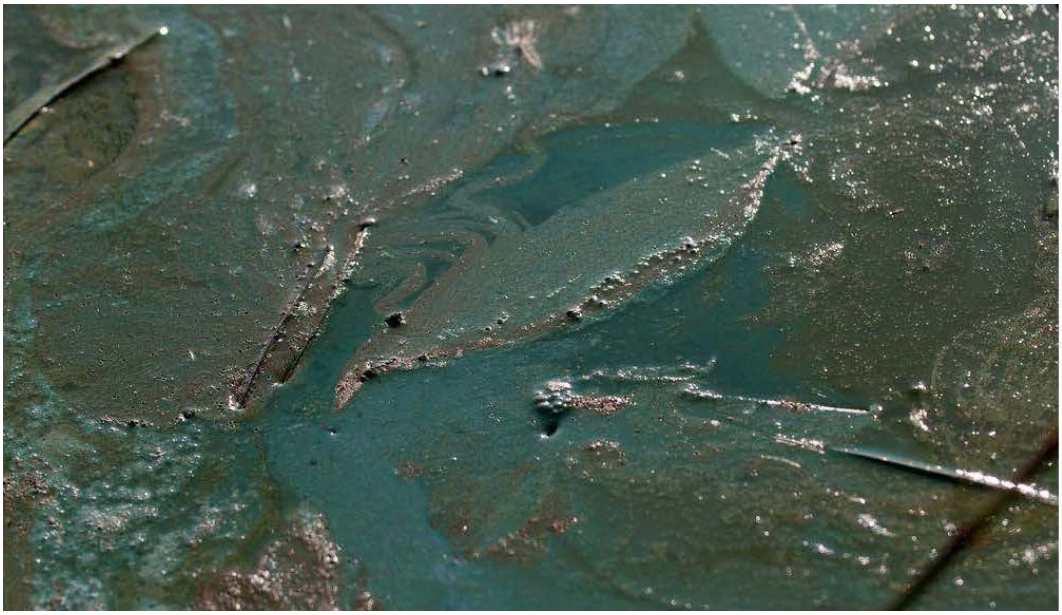
where it is decomposes. The process consumes massive amount of oxygen leaving the surrounding environment dilapidated. Marine animals feeding on the algae either die or relocate from these zones resulting in more algae that worsen the situation.

Global Dead Zones

As we stated earlier in chapter 13, no part of the world is in immune to this ecological disaster. There are about 500 known dead zones around the globe. The Gulf of Oman and the Gulf of Mexico have been affected immensely. In early 2018, researchers found what is thought to be the world's largest dead zone in the Gulf of Oman in the Arabian Sea. The hypoxic zone is as large as the state of Florida. The area is devoid of oxygen and shows minimal presence for aquatic animals. The concentration of algae is so high that it took the use of underwater robots to map out the exact area affected. The Gulf of Mexico is the perhaps the most famous dead zone as millions of tons of waste is dumped by the Rio Grande and the Mississippi rivers. The condition of the gulf has decimated the once thriving shrimp industry in the regions. Other dead zones in the US are found off the coast of Virginia and Oregon."[4]

WE CAN CLEAN UP THE ENVIRONMENT

Cleaning up the global environment is simply a matter of going out into the woods, the oceans, the rivers removing the human waste that does not biodegrade and naturally decompose. Our goal is return the natural world back to where it was in 1750. This was the world before the massive migration by European tribes as they left the poverty of Europe for better lives. This is not complex rocket science. It is labor intensive which is exactly the type of work we will need with millions of people now unemployed.



Dead zones are caused by lack of oxygen from algae blooms.[5]

What was the world like in 1750 before the population explosion, industrialization and migration? The forests were much larger. There were more animals. The fisheries were intact. Whales were not on the edge of extinction. The planet was full of plant and animal life. The giant Redwoods that had been alive for over 1,000 years, were living their lives just fine in harmony with their friends and neighbors. The salmon were running and the ecosystem was completely in tack.[6]

The small hunter gatherer societies lived in harmony with nature. They killed what they ate and gathered food from the abundant plants. In the space of a mere 300 years, this has all changed. It's obvious that we are nearly at an ecological disaster. Either we change our path, or we destroy our Earth Mother by continuing to kill the plants and animals for money. It is that simple. The more prudent choice is clean up the planet and bring life back to a dying world. Extinction, whether of plants or animals is forever. We often forget or refuse to accept reality, humans are mammals. Killing rare creatures is a crime against all of us. We need to restore the natural world and live within its boundaries with a plant-based diet that will comfortably feed us all.

Occam's razor remains a solid logical principal. The simplest solution is usually the right one. It is common knowledge among literate individuals that our food production is causing us numerous problems. Cattle production is an indirect consumption of protein. Calling it inefficient, an environmental disaster and a cause of our most healthcare problems, is being kind.[7]

The science does not support the continued use of farmland to raise cattle. Neither does the economics. Without tax subsidies, the industrial production of beef, chicken and pork is not economically viable. As people continue to realize the adverse health effects of industrial animal production, demand will continue to decrease. Add changes in technology and these industries will collapse.[8]

The jobs and entire labor market will change. This too is normal. We no longer produce buggy whips and cannonballs. As technology and times change, the products and services change with them. The continued use of animals for protein is just no longer possible. Killing the rain forests, the dead zones created by the waste issues from farm runoff, we have a choice: either go to a plant-based diet and clean up the planet or destroy all of creation.

According to Animal Welfare Worldwide:

[T]here are over 74 billion farmed animals.194 In the U.S. alone, 9.5 billion animals are slaughtered each year for food, the vast majority (95%-99%) of which are raised on industrial farms. These farms, or CAFOs, are often criticized for the mistreatment of animals due to confinement, crowding, over medication, forced reproduction, abuse, and inhumane handling. In response, some states, corporations, and organizations have addressed these concerns with policies and legislation, including phase-outs and bans of battery cages for hens, gestation crates for sows, tail-docking cattle, and the excessive confinement of veal calves, and the repeal of anti-whistleblower laws. By removing live animals from production, concerns about the treatment and slaughter of animals raised for food and other animal-derived products will cease to exist.[9]

We do not have a food issue. We have a secondhand eating issue. We could feed every human on the planet today by taking the feed we are giving to animals and using it to feed humans.[10]

A PLANT BASED DIET SOLUTION TO MOST OF OUR PROBLEMS

Transforming our diet from second hand eating of protein will require the creation of millions of new jobs. These large cattle, chicken, pork and turkey mass produced industries will end. History and technology, not the animal rights movement will bring them to a finish. This is normal and the ending of these industries is good for

the planet. The need for food, water and less use of water and changes in technology will collapse these wasteful industries.

The creation of new technologies and companies like Beyond Meat have caught on with the public. As Beyond Meat initiated the alternative to farm raised, growth hormones, antibiotics market, the vegan movement gathers more followers. Fast food outlets are offering alternatives to eating dead animals. Even Kentucky Fried Chicken has introduced a chicken alternative.[11]

With less land and water and a reduction of greenhouse gases and the public wanting a safe environment, the entire agricultural system of the planet will change to a plant-based diet. To summarize the findings of a major study about the change in agriculture:

> "We are on the cusp of the deepest, fastest, most consequential disruption in food and agricultural production since the first domestication of plants and animals ten thousand years ago. This is primarily a protein disruption driven by economics. The cost of proteins will be five times cheaper by 2030 and 10 times cheaper by 2035 than existing animal proteins, before ultimately approaching the cost of sugar. They will also be superior in every key attribute – more nutritious, healthier, better tasting, and more convenient, with almost unimaginable variety. This means that, by 2030, modern food products will be higher quality and cost less than half as much to produce as the animal-derived products they replace. The impact of this disruption on industrial animal farming will be profound. **By 2030, the number of cows in the U.S. will have fallen by 50% and the cattle farming industry will be all but bankrupt**. All other livestock industries will suffer a similar fate, while the knock on effects for crop farmers and businesses throughout the value chain will be severe." (emphasis added)[12]

Eating meat has been challenged by many popular icons. Arnold Schwarzenegger, Jackie Chan Lewis Hamilton, Novak Djokovic, Chris Paul, James Wilks and others made a documentary that explained the benefits of a plant-based diet. James Camaron's movie "Game Changers" [13] explores how we can get much better health and have much higher performance by going with a plant-based diet.

In a world becoming more crowded, eating secondhand protein will not be possible economically or environmentally. Can we turn this around in time before we collapse the environment or the global economy? We can. This can be accomplished at the grass roots level on an individual by individual. When people stop buying dead animals for food, the corporate world will stop selling them. The power for substantive change is with the individual, not with large corporations or governments.

People who get their protein from plants reduce their chances of heart disease by 55 percent.[14] Given the astronomical health care costs the United States and other

countries are facing with aging populations; we have little choice except going to plant based diets. This must change because the virus we let loose on the planet by eating wild animals kills people with health problems caused by heart disease, diabetes, high blood pressure.[15]

A healthier population should be the goal of every government. Since governments are often influenced by the campaign contributions from various powerful members of society, change will have to come from the individual. Most people do not contribute money to politicians or political campaigns. The agricultural industry contributes millions of dollars to U.S. politicians.[16] Consequently, expect no help from government. They change must come from the public when they stop buying processed foods that government and industry are aware are harmful.

The jobs in this century will be in a complete transformation of the global agricultural system. Instead of growing corn, wheat and soy for cattle, chicken and pork feed, we will feed people directly. The politicians who do not want to change the interest of public and planetary health can be voted out of office. If they will not leave office, the public can vote with their wallets and not buy these harmful dead animals as protein.

It is common knowledge in the environmental movement that the rainforests of the planet are being cut down to raise cattle and soy and for the production of palm oil.[17] We have plenty and plenty of data. The public just needs to change their consumption habits to save the wildlife on land and in the oceans. According to the Rainforest Partnership:

> "What do hamburgers and chainsaws have in common? Both cause massive deforestation of tropical rainforests across the world. The production of beef is without question the biggest cause of deforestation in the Amazon, with figures ranging from 65 to 70 percent of all deforestation in the area from 2000 to 2005. While more recent figures from 2014 show that overall deforestation is down, the percentages have stayed fairly constant, showing that beef is still the primary reason for cutting down the forest. However, these numbers account only for the areas cleared for the creation of pastures, and they fail to include the food being produced for cattle consumption."[18]

Animals, especially meat production for consumption by humans is obviously destroying the planet. From rivers that no longer flow into the oceans, to the greenhouse gases released by the millions of cattle waiting to be slaughtered, more than one quarter of the planet's fresh water goes to produce animal foods.[19] This cannot continue.

This is the tip of the iceberg on environmental problems. Animal waste is at least 50 times that of human waste.[20] These facilities are not required to build waste processing facilities next to their industrial operations.[21] As a result, they pollute rivers,

aquifers and the overall environment. Agriculture is the bigger culprit in fossil fuel emissions with over 15 percent of total US greenhouse gases. This is more than the entire transportation sector combined.[22]

All politicians have the same data than we in the environmental movement. They know the problems. But with massive campaign contributions from the agricultural industry, change will come from the consumer. *You don't have to buy their products.* The industry will change because lack of demand from consumers, not because of changes in public policy. Remember, politicians are cowards. They follow, they don't lead, but they do lie.

Millions of jobs can be created in changing the restaurants from serving up dead animals to creative vegetarian and vegan diets. Again, this is normal capitalist evolution. Capitalism is a creative destructive process that replaces old inefficient products and services with new, and often better. Our cars, planes, phones, computers, are better. We can have better food and that is the direction we will go. With the right fuel in your body, you will think and perform better. Just like you do not put sugar in your sports car, don't put poisoned dead animals in your body.

We are in a diabetes epidemic. If not this virus, other diseases will kill people who refuse to take their health serious. In addition to changing the diet, new jobs will be in small community farms, local growth and consumption. People will plant home gardens. The carbon footprint will be lower as local farms support local communities.

TRANSPORTATION WILL BE DIFFERENT

Artificial intelligence is here and it will get more powerful, more intelligent and useful.[23] The transportation of the planet is going to completely change. AI will cause self-driving cars, trucks and public buses. Even trains might be operated with AI. The result will be far fewer human drivers and a complete change in the labor pool. According to TruckInfo.Net, the United States had over 3.2 million truckers and 8.9 million people employed in trucking related jobs.[24] With self-driving vehicles, these trucking jobs will be replaced by robots.

But, with the virus, we have hundreds of millions of people who are unemployed. Labor is cheap and there is a glut of it worldwide. There will be high tech engineering jobs in designing new transportation systems that do not depend on fossil fuels. With more poor people, there will be a greater need for more and better mass transit. There will also be a displacement of people in all fields. Not just blue-collar workers will lose their jobs. White collar workers will also be replaced as robots can do calculations faster, cheaper and do not need days off.

AI is fundamentally different from technological changes of prior eras. The Stone Age did not end because we ran out of stones. The Bronze Age did not end because we ran out of bronze. The same is true of the Iron Age and other periods of human history. The nature of labor has changed and will continue to change as that is the only constant in human behavior.

Off shoring causes approximately 20 percent of the jobs that have been lost. Automation is a much bigger cause of blue-collar job loss.[25] We need to adjust to robotics, embrace this new technology and accept the reality that robots will not go away. The new machines will affect every sector of the economy and human life. To adjust to these technological changes, we will have to think outside the box. We will create entire new industries, labor intensive jobs requiring physical labor, not technological solutions.

Robots are not presently capable of cleaning up rivers, the sides of roadways, parking lots, hotels, trailer parks, and the grunt work janitors and landscapers do every day. This environmental cleanup work has to be performed all over the world. Policy planners have to create these labor-intensive jobs for humans, even if they can be performed by machines. With a planet of almost 8 billion people and hundreds of millions unemployed because of the virus, we need to create millions of jobs. We need to make work as labor intensive as possible.

The planet has so many countries that need clean up. The developed world used the Third World as their garbage dumps for all sorts of electronic and other waste streams.[26] This despicable behavior occurred with the help of the various governments who accepted bribes for allowing their countries to be converted into garbage dumps. Previously pristine ecosystems have been destroyed with electronic waste from developed countries.

Every one of these miserable disgusting electronic waste dumps will need to be rehabilitated. This will create jobs for the local communities, for companies in the developed world that specialize in environmental cleanup. It will also create jobs for attorneys. These communities can seek compensation for the illegal acts of the companies that dumped their garbage and from the corrupt politicians who allowed this behavior.

The United States has a complex system of environmental laws that forbid these illegal behaviors. These legal systems need to be set up in developing countries. Again, this will create work for the millions of excess attorneys in the developed world.

A garbage heap in Dar es Salaam, Tanzania. The country in recent years has enjoyed increasing wealth and prosperity, but also an increase of electronic waste, which is often improperly disposed of. Credit...Jacques Nkinzingabo for The New York Times.[27]

Not every country has corrupt governments or are poorly run. Rwanda is the example of how to overcome a tragedy and have a clean country. After the genocide, the country was in ruins, approximately one million dead in a population of less than eight million. The country is amazingly clean. They banned plastic bags. The streets are not littered, and the walls do not have the graffiti so common in other developing countries. The internet was better than Europe's and the hotels were much nicer.[28] Their wildlife was carefully protected. Ecotourism was an important part of their economy. The cost to go see the mountain gorillas and chimpanzees was $500 a person, not including the cost of payment for guides and hotels.[29]

Before the virus and the collapse of the global economy, ecotourism was taking off like wildfire all over the world. Once the virus burns through the human population and the second and third waves do their damage, we will have to develop these industries again. Many countries understand that their wildlife is more valuable alive than as trophies for people with low self-esteem.

Ecotourism is a great way for people from different parts of our planet to work together and enjoy but not destroy nature. Millions of jobs can be created by taking people out on the ocean to view the wildlife but not destroy it. We cannot just tell the thousands of giant trawlers presently emptying out the oceans to just not work and be unemployed. Ecotourism is a good alternative. If we make these jobs labor intensive, all boats rise with the tide.

Just as we cannot close off military bases and defense contractors and tell them to be unemployed, we cannot just take thousands of commercial fishing boats off the high seas. We need to convert these industries to ecotourism and the very careful mining of the ocean floor. People need to earn a living. Before the virus, commercial fishing was emptying out the oceans. These practices of just killing everything in sight regardless of the environmental impact will be banned by economics more than by prudent changes in government policies.

The governments that are allowing industry to empty out the oceans know full well what is happening. These politicians receive campaign contributions and/or political favors and will not enact laws stopping these environmentally horrific practices. Greed takes precedence over good governance. The consumer must take matters into their own hands and not buy fish products from all over the world as a “food choice.” This too will now change as the virus has unemployed millions of people all over the world. Consumers in previously “rich” countries will no longer be able to afford expensive seafood flown in from across the planet with a huge carbon footprint.

New industries can and will be created as a replacement to the commercial fishing industry. One new industry will be in ocean law enforcement. As nations realize they must work together to save the fisheries from complete collapse, laws will hopefully be enacted banning illegal fishing. The fishing captains who once traversed the planet in search of new and more lucrative fish stocks can be hired to patrol the high seas. There is precedent for this conversion. Poachers have been hired as park rangers to protect wildlife in African countries. Commercial fishermen can be hired as ocean wildlife rangers and enforce newly created fishing laws.

We will stop commercial fishing. Either we continue our present path and kill the fisheries, or we convert these hugely wasteful industries to ocean mining, ecotourism and law enforcement. We often make life to be more complex than it is. In the last 150 years we have made a mess of the environment. It is our house and all of us live here. With a planet bursting at the seams with people, we can create a new economic model based on sustainability. In the short run, we can create hundreds of millions of jobs just cleaning up the old tires, plastic bottles, used mattresses, discarded couches, computers, keyboards, televisions, clothes, shoes, toothbrushes, bottles and the tens of thousands of different items we developed to make life more convenient.

Most global waste is in the packaging. As we change the packaging laws and convert the planet from single use plastic to sustainable products, we can keep our house clean. Like each other or not, we must be cleaner. These recycle facilities will be built all over the world.

Then our attention will turn to what to do with the material from these recycle facilities. New industries are already being created from the recycle waste being used to make new products. From rubber mats at children’s playgrounds to clothes, numerous products can be made with recycle materials. As the days of single use

items ends, a new era of sustainability will transform industry worldwide. The countries and companies that go with sustainability will fare better than the dirty communities all over the world.

CHANGES IN MEDICAL TECHNOLOGY AND ATTITUDES TOWARD DEATH

Life will never be the same. This virus was a natural occurrence. Viruses have been around as long as humans have occupied our small planet with all of the other plants and animals. We have this ridiculous belief in the Western world that humans are masters over the planet. We have seen that Covid-19 has no vaccine and is highly contagious.

Immediate medical testing is taking place all over the planet to determine who is infected with this dangerous respiratory virus. Entire new industries will be created in medical testing and treatment of pandemics. People will be screened before they go to public gatherings to ensure the safety of everyone else. Just as we are now screened for weapons before we enter a large public event like a football game or a concert, we must screen people for illness. If a person is ill, they may not join with crowds at public gatherings.

The pandemic will probably kill millions of people. This is unfortunate but to be expected. Massive populations, unlike anything seen in history are the breeding ground for disease. Death will be looked at as a normal course of events. During the Black Death of the Middle Ages, so many people in Europe were dying, the communities could not keep up with the burials.[30]

From Italy to Ireland, Europe lost half of its population. There was no medical treatment. People turned on each other. Their world forever changed.[31] The indigenous people in the western world experienced the pandemics created by exposure to viruses new to them. These diseases destroyed their world and killed hundreds of millions in the greatest genocide in human history.

If we are smart, we will work with each other to develop vaccines and treatments. When demagogues use pandemics to divide the public, we will only be in trouble if we follow their messages of hate. Don’t be afraid. In time gravity wins and our frail bodies die. Death is normal and should not be feared.

Conclusion

"Nothing will benefit health and increase the chances for survival of life on Earth as the evolution of a vegetarian diet."

-Albert Einstein

We need to use this environmental pandemic crisis to create a new global paradigm. With the Earth at the center of the universe, all life takes on a more important role. Life on Earth is special and unique. Complex life exists nowhere else in our solar system. With other star systems so far away, this is the center of our universe.

The high seas will be closed off to industrial commercial fishing. Humans will either volunteer or global fisheries will be slaughtered to extinction. This slaughter so people in rich countries can have "food choice". Rich countries will survive with less food choices. Converting to a plant-based diet will change everything for the better. Eating dead animals caused this virus to spread all over the world. We have a choice, end the wild animal markets and industrial farms or die. This practice of killing animals had to end. We can choose life.

The choice is to do what we did with the buffalo and whales. Choose life and step back from the abyss. We can save these important creatures. This is one environmental conservation battle we can win. Humans saved the buffalo from certain extinction. Whales, mountain gorillas, elephants are not extinct yet— there are conservation battles out there where we have made some progress. Cleaning up the global environment will bring back life to places that have been devasted by killing of trees and animals. All life is important, not just humans.

There is no reason to lose this important historic battle to save the wildlife. We need to protect the oceans and rehabilitate the land areas we have polluted. We can do this by creating millions of jobs and cleaning up the planet. Working together, we can live under the peaceful rule of law. The alternative of a lawless world will mean the death of civilization and complete chaos. We need not choose death, greed and the stupidity of hate over life and love. We humans differ from our animal brothers and sisters. We have free will.

A Global High Seas Marine Preserve will ban nations from dumping their garbage into the oceans and ban nations from killing the fish because they can. This change in international law will protect the ocean's wildlife for all time and eternity. Humans and the ocean's wildlife will be on an even playing field. The ocean is about 70 percent of the Earth's surface yet only 4.5 percent is protected. The result is half of the ocean's wildlife has been slaughtered, over 90 percent of the large predator fish have been killed off and humans are killing over 200,000 sharks each day. Let's change the law and protect the oceans.

The legal framework for peace created after World War II was ignored by the United States and other great powers. Because of not working within international law, the fisheries and the ocean's wildlife are in big trouble. We are on the very edge of an ecological abyss brought about by a virus and pandemic. This requires global cooperation.

Russia and China must lead the world away from an ecological abyss. The United States does not have the leadership required to save humanity. The hate being preached by U.S. politicians has made things worse. Hate did not solve anything.

Russia will have to do in this century what they did during the Great Patriotic War, known in the West as World War II. Their leaders are highly intelligent. They and the Chinese understand the environmental problems facing our small planet.

Russia has been invaded numerous times. They take their defense matters seriously. For them it has been life and death. The environment and protection from pandemics are a national security issue for the entire planet. That certain politicians do not understand these issues does not make them go away. The Russians and Chinese have brilliant scientists.

China will soon be the world's largest economy. The Chinese government is serious about reducing their greenhouse gases. The Chinese are building the most electric vehicles and lead the world in solar power production as well as research and development. Their scientists understand the importance of immediately addressing global environmental problems. China can save the sharks from extinction by banning shark fin soup. Instead of shouting at the Chinese, we need to politely ask them to seek food choice alternatives to shark fin soup. Bison from Native American reservations is an expensive and sustainable food choice alternative. This will help the Native American community and provide rich Chinese families with very exclusive, expensive meals for special occasions.

Once the United States has competent leadership, we need to lead the world in making the high seas off-limits to industrial commercial fishing. We have the world's most powerful navy. We need to use this global power to enforce international law in protecting the oceans. This change in mission will cause new ship building as aircraft carrier battle groups become obsolete. New mining vessels can be created, and global enforcement will result in healthier fisheries.

Without the major economic and military powers working together to fight pandemics, protect the oceans, the legal framework for peace will not be honored. Law after law and treaty after treaty have been initiated since World War II. These rules of behavior are just not followed because there has been no enforcement. The powerful nations do whatever they want. This illegal behavior has to end. As Alan B. Sielen observed in his piece "How to Save the Oceans":

> "There is no shortage of international recommendations, action plans, and other prescriptions for restoring the oceans' health. The 1982 United Nations Convention on the Law of the Sea, the 1992 Rio Earth Summit, the 2002 Johannesburg World Summit on Sustainable Development, and the 2012 United Nations Conference on Sustainable Development (Rio+20) all put forward different ways to protect the oceans from pollution and overfishing, preserve biological diversity, and help developing countries build the scientific and institutional capacities to run effective conservation and management programs of their own. The calls for action have brought some victories, such as international rules limiting what oil tankers discharge into the sea, a global ban on the disposal of nuclear waste into

the ocean, and the creation of marine reserves, or protected areas of the ocean. But as much as these measures helped, they have not eliminated all the other threats to the seas."[2]

Creating a Global High Seas Marine Preserve will close off the high seas to commercial fishing. The current path where less than five percent of the oceans is protected, the fish stocks will soon be fished to extinction. This must not happen. It's not too late. If we begin protecting the fisheries they will recover in short order. This will require a change in diet where people in rich countries will have to eat far less seafood. Public education is the key to success.

The planet is now one — all we need is a functioning international legal system where nations and wealthy individuals agree to play by the rules. The United States should work with other countries and expand the rule of law throughout the entire planet. We cannot be a law on to ourselves and ignore international law. The pandemic has brought an end to Pax Americana.

This Covid-19 Virus is a clear message from our great Earth Mother to immediately change our behavior. This is a medical problem that requires all of us to work together. We will work together and stop the mass murder of plants and animals or we will have more pandemics. It's that simple.

I did not spend a great deal of intellectual effort addressing international "terrorism" in this small book for a simple reason. That is an international law enforcement problem. As a global community, we need to work together and arrest people charged with criminal offenses. There are more pressing problems facing our small planet than rich Middle East governments funding criminals. International law will solve that and other problems.[4]

Law is a sacred, fragile flower, a belief system. Without the rule of law there will be the extinction of numerous land and ocean species, and eventually a collapse of civilization. Our environmental problems will cause extinction. We will choke to death in our own pollution. Viruses will become more virulent and continue to jump from animals to humans. The Earth's immune system will continue to see us as parasites and try to get rid of us. The better approach is pass laws that protect the lives of plants and animals.

Amending the Law of the Seas Treaty and creating a Global High Seas Marine Preserve will put humans and nature on an even playing field. This change in international law will save the ocean's wildlife and fisheries. This is our destiny. Success is the only option. We will succeed.

Danny Quintana

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Chapter 17

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8. An excellent overview of government programs that subsidize garbage food is available online with the documentary, "What the Health" cite 2 supra starting at minute 50. This program is required viewing.
9. Ibid at minute 57.
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12. See also, "Game Changers" the documentary Executive Producer James Cameron. Available on NetFlix https://gamechangersmovie.com/ and "Vegan 19" online on NetFlix https://www.youtube.com/watch?v=2AYOViszK_A A contrary view that criticizes "What the Health" is: "Debunking the documentary 'What the Health'" by the Kendell Reagan Nutrition Center, 2017 at: https://chhs.source.colostate.edu/debunking-documentary-health/?fbclid=IwAR36h6j0M9aI9BcevXoPvY0ftlO97D2rk96AQPK7d6mZGmN3iBOrzgC3Wss
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21. See the following excellent documentaries: “The Game Changers” https://gamechangersmovie.com/ “Dominion” https://www.dominionmovement.com/ “Cowspiracy” https://www.cowspiracy.com/ “Forks Over Knives” https://www.forksoverknives.com/ “What the Health” https://www.whatthehealthfilm.com/“Food Choice” on Vimeo https://vimeo.com/197280362 “Eating You Alive” https://www.eatingyoualive.com/ “Blackfish” http://www.blackfishmovie.com/ “The Cove” https://www.opsociety.org/our-work/films/the-cove/ “Racing Extinction” https://racingextinction.com/ “Ghosts in our Machine” https://www.theghostsinourmachine.com/And the most important film that started the entire animal rights movement, Shaun Monson’s classic, “Earthlings” https://www.nationearth.com/earthlings-1/
22. See Open Secrets at cite 6, supra.
23. See “Global Wealth Inequality” 2017 this short video summarizes global data in just four minutes. Online at: https://www.youtube.com/watch?v=uWSxzjyMNpU
24. See “Income Inequality: Evidence and Implications with Professor Edward Saez, May 7, 2013 University of California, online at: https://www.youtube.com/watch?v=_y7Xtwxd90I See also, cite 25 and one of the best sites on the internet at: “Wealth Inequality in the United States” online at: https://inequality.org/facts/wealth-inequality/
25. “Wealth Inequality in America” online at: https://en.wikipedia.org/wiki/Wealth_inequality_in_the_United_States
26. “The Economic Recovery Tax Act of 1981” online at: https://en.wikipedia.org/wiki/Economic_Recovery_Tax_Act_of_1981
27. Ibid. When Reagan came into office the national debt was $900 billion. When he left office it was at over $2.6 Trillion.
28. See “Economic Growth and Tax Relief and Reconciliation Act of 2001” online at: https://en.wikipedia.org/wiki/Economic_Growth_and_Tax_Relief_Reconciliation_Act_of_2001 Cutting taxes for the richest Americans reduced government revenue and exploded the national debt to over $10 Trillion. Bush II left office with the 2008 Republican Recession and an economy in freefall.
29. See “Tax Cuts and Jobs Act” of 2017 gave over 70 percent of the tax benefit to the top 20 percent. Cutting government revenue further exploded the deficit. Now with the pandemic, the country is trying desperately to borrow our way out of this mess. Historically, no nation or individual has ever borrowed their way to prosperity. Today, the national debt can’t be calculated as it keeps growing by the day. With millions of unemployed, the tax revenue will not be there and the national debt will explode to levels never seen before in history. See Institute of Tax and Economic Policy at: https://itep.org/tcja-2020/
30. Charts on wealth inequality courtesy of Joey Devilla, 2013 and updated on his blog. Online at: http://www.joeydevilla.com/2013/03/04/viral-video-of-the-moment-wealth-inequality-in-america/ Dow Jones chart courtesy of Charles Schwab. There are several sources on the total amount of the national debt. The best site on the ongoing national debt is: https://usdebtclock.org/
31. “The Panama Papers”, The Shady World of Off Shore Companies.” When we were in Sao Tome, Africa delivering wheelchairs with the Mobility Project, I counted ten international banks in a tiny island nation of less than 400,000 people. It was obviously not a drug haven as it did not have that stench of narcos. What it did have is rich white boys flying in on private jets. I looked at my friends and started laughing, “geez, cocao is really valuable.” There are numerous tax havens all over the world that shelter money from corrupt politicians and super rich people who refuse to pay their share of taxes.
32. See “How Much Does Agriculture Contribute to Global Warming?” by Pierce Nahigyan, February 9, 2016 at Planet Experts online at: http://www.planetexperts.com/how-much-does-agriculture-contribute-to-global-warming/ Mr. Nahigyan references the World Resources Institute and UN data. Since the pandemic, the air in cities all over the world is now cleaner as there are far fewer vehicles on the highways.

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19- Much has been written about humanity's largest genocide. Native Americans did not become citizens until 1924. Before that time they were routinely murdered and no one was prosecuted. The tragedy of what happened to the indigenous people globally lives on in the damage to these traditional societies. From alcoholism and obesity to drug abuse and unsolved murders, the Native American community has had to overcome enormous obstacles to survive. Poverty is the rule on most Reservations. Suicide rates are higher as is unemployment and lower educational attainment. One of the more interesting articles on the tragic genocide is: "When Native Americans Were Slaughtered in the Name of 'Civilization'" by Donald L. Fixico at: https://www.history.com/news/native-americans-genocide-united-states

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37- "What is Solar Energy and How do Solar Panels Work?" by Martin Delbono, October 24, 2017 at: https://us.sunpower.com/blog/2017/10/25/how-does-solar-energy-work/
38- Ibid. There are numerous sources on the Internet which provide extensive information on solar energy works. The Energy Information Agency cite 33 supra is comprehensive.
39- "America's Solar Energy Potential" at http://www.americanenergyindependence.com/solarenergy.aspx
40- Solar Power is standard off the shelf technology. See generally, https://us.sunpower.com/utility-scale-solar-power-plants/ and cites 33 and 39.
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42- "Photovoltaic Cells: Converting Photons to Electrons" by Jessica Toothman and Scott Aldous at https://science.howstuffworks.com/environmental/energy/solar-cell1.htm
43- "Solar Cells Turn Photons into Electrons" at: http://www.alternative-energy-tutorials.com/energy-articles/solar-cell-turns-photons-into-electrons.html
44- See cites 37, 38 and 39 supra.
45- Ibid.
46- "Moapa Southern Paiute Solar Project" at http://www.firstsolar.com/Resources/Projects/Moapa-Southern-Paiute-Solar-Park
47- Ibid.
48- Ibid.
49- "How to Honor the Seven Generations" by David E. Wilkins, June 18, 2015 Indian Country Today at: https://newsmaven.io/indiancountrytoday/archive/how-to-honor-the-seven-generations-0UNiIfbN5UOL36SXV6rIiQ/
50- Ibid.
51- "Environmental Impacts of Hydroelectric Power" at: https://www.ucsusa.org/clean_energy/our-energy-choices/renewable-energy/environmental-impacts-hydroelectric-power.html#bf-toc-1
52- Ibid.
53- "Nuclear Power in the USA" World Nuclear Association updated December 2018 at: http://www.world-nuclear.org/information-library/country-profiles/countries-t-z/usa-nuclear-power.aspx
54- "Environmentalists worry Utah regulators let violations at radioactive waste site 'fly under the radar'" by Emma Penrod, January 18, 2018 Salt Lake Tribune, at: https://www.sltrib.com/news/environment/2018/01/11/utah-fines-radioactive-waste-handler-50k-for-failure-to-control-dust-but-its-not-the-dust-that-worries-environmentalists/ See also, "The Worst Nuclear Accidents of All Time" by Amber Pariona, WorldAtlas, Sept. 13, 2018, online at: worldatlas.com/articles/deadliest-nuclear-and-radiation-disasters-in-history.html.
55- "Spent Nuclear Fuel: a Trash Heap Deadly for 250,000 Years or a Renewable Energy Source? By David Biello, January 28, 2009 Scientific American at: https://www.scientificamerican.com/article/nuclear-waste-lethal-trash-or-renewable-energy-source/
56- Ibid.
57- Ibid.
58- Conversation with Skye Worthen, Vice President of Global High Seas Marine, 5-9-2020 by phone SLC, UT.

59- There is extensive scientific data on the environmental and human damage created by coal mining all over the world. See generally, "Environmental Impact of the Coal Industry" at: https://en.wikipedia.org/wiki/Environmental_impact_of_the_coal_industry
60- See http://www.ev-volumes.com/
61- The long term damage created by industrial factory farming has been a concern of the environmental movement for several decades. There is extensive data on the damage from the waste streams produced by these factory farms. See generally, "The Triple Whopper Impact of Global Meat Production" by Bryan Welsh December 16, 2013 Time Magazine at: http://science.time.com/2013/12/16/the-triple-whopper-environmental-impact-of-global-meat-production/
62- "Federal Highway Act of 1956" online at: https://en.wikipedia.org/wiki/Federal_Aid_Highway_Act_of_1956
63- "Giving up beef will reduce carbon footprint more than cars, says expert" by Damian Carrington, July 21, 2014 The Guardian at: https://www.theguardian.com/environment/2014/jul/21/giving-up-beef-reduce-carbon-footprint-more-than-cars
64- "Obesity and American Indians/Alaskan Natives" HHS.gov at: https://minorityhealth.hhs.gov/omh/content.aspx?lvl=3&lvlID=62&ID=6457
65- "Basic Facts About Bison" Defenders of Wildlife at: https://defenders.org/bison/basic-facts

Chapter 22

1. "What is an Ocean Dead Zone?" by Victor Kiprop, August 9, 2018 online at: https://www.worldvision.org/sponsorship-news-stories/global-poverty-facts#how-many
2. One of the better sites on global poverty is on the World Vision web site,"Global Poverty, Facts, Frequently Asked Questions, and How to Help" at: https://www.worldvision.org/sponsorship-news-stories/global-poverty-facts#how-many The internet has many great sources. The United Nations web site is excellent. https://www.un.org/en Oxfam International has been working on solving global poverty since 1942. They are in it for the long haul. Please visit their web site and contribute what you can. https://www.oxfam.org/en
3. Chart courtesy of World Bank, online at: https://www.globalissues.org/
4. Victor Kiprop, cite 1, supra. See chapters 1 and 13 supra.
5. Ibid. Kiprop, cite 1, supra.
6. See Chapter one, cite 18 supra. "Artifishal, The Fight to Save the Wild Salmon" by Patagonia, online at: https://www.youtube.com/watch?v=XdNJ0JAwT7I
7. See generally, "Cowspiracy, Planet Climate Change" documentary, April 17, 2019 on YouTube online at: https://www.youtube.com/watch?v=isUW0uCfIYk&feature=emb_logo "Earthlings" by Shaun Monson, 2005, now free online at YouTube: https://www.youtube.com/watch?time_continue=12&v=8gqwpfEcBjI&feature=emb_logo This film is required viewing if you want to change the world and have our species survive.
8. Ibid. See also the data on the United Nations web site at: https://www.un.org/fr/
9. "Rethinking Food and Agriculture, The Second Domestication of Plants and Animals, the Disruption of the Cow, and the Collapse of Industrial Livestock Farming", September 2019, Cathrine Tubb and Tony Saba. ReThink X, online at: https://static1.squarespace.com/static/585c3439be65942f022bbf9b/t/5d7fe0e83d119516bfc0017e/1568661791363/RethinkX+Food+and+Agriculture+Report.pdf
10. See cite 7 supra. You can grow corn to feed humans instead of animals.
11. See "Vegan 2019, the film" online at: https://www.youtube.com/watch?v=2AYOViszK_A
12. See cite 9 supra. Executive Summary.
13. See "Game Changers" on NetFlix or other social media. Directed by Oscar winning documentary filmmaker Louie Psioyos and executive producer James Cameron. This film exposes why and how the body performs better with a plant based diet.
14. Cite 13 supra, Game Changers at minute 36.
15. The studies coming in from the analysis of the pandemic in Italy, 98 percent of the victims were elderly and had other health problems. At least 75 percent had high blood pressure. Interview with Ivan Fino, GHSMP member in Italy. The U.S. Center for Disease Control has the following

information on their web site. “Covid-19 can cause mild to severe illness; most severe illness occurs in older adults.” https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/summary.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fsummary.html

16. An “honest politician” is a person whom when bought stays bought. In the United States, politicians solicit campaign contributions. In turn, they pass legislation and provide tax subsidies to their contributors. “The industry’s giving reached its peak in the 2016 presidential cycle spending more than $118 million.” Online at Open Secrets web site: https://www.opensecrets.org/industries/indus.php?Ind=A
17. See, “The Beef Industry and Deforestation”, July “Beef Production is killing the Amazon Rainforest” at One Green Planet, 2005. https://www.onegreenplanet.org/animalsandnature/beef-production-is-killing-the-amazon-rainforest/
18. “The Beef Industry and Deforestation” August 8 2016 online at: https://rainforestpartnership.org/the-beef-industry-and-deforestation/
19. – 22. Cite 13 supra, at minutes 1:00 to 1:22.
23. There is a tremendous amount of very good data on artificial intelligence. Some inventors/entrepreneurs like Elon Musk are concerned about the dangers a self-aware computer can present an existential threat to humanity. See, “Elon Musk Says Humans Should Be Very Concerned about AI” July 16, 2017 online at: https://www.youtube.com/watch?v=T6EtD6FFMIc&feature=emb_logo
See, “In the age of AI” on Frontline, December 2, 2019 at: https://www.youtube.com/watch?v=5dZ_IvDgevk&t=2569s Silicon Valley is quietly concerned about the labor disruptions caused by AI. Job loss is a reality. We have to figure out how to live in a world with excess unskilled labor and massive improvements in robotics.
24. See “Truck stats” online at https://www.truckinfo.net/trucking/stats.htm
25. Cite 23 supra, Frontline video.
26. There is substantial data on electronic waste dumping in the developing world. Here is one of the better articles: “Electronic Marvels turn into Dangerous Trash in East Africa” by Amy Yee, May 12, 2019, New York Times, online at: https://www.nytimes.com/2019/05/12/climate/electronic-marvels-turn-into-dangerous-trash-in-east-africa.html This dumping is taking place in numerous sites all over the developing world. Ghana is a major site for electronic waste dumping. See, “Turning e-waste into Gold, the untapped potential of African landfills.” September 24, 2018, United Nations at: https://www.unenvironment.org/news-and-stories/story/turning-e-waste-gold-untapped-potential-african-landfills
27. Ibid, NY Times, cite 26 supra. The Basel Convention of 1989 forbids developed nations from carrying out “unauthorized dumping” of e-waste. The obvious way to circumvent the treaty is just bribe a politician.
28. Visit to Rwanda in November 2011. The genocide was a cumulation of hate speech on the local radios, deep seated and unaddressed ethnic tensions with deep historical roots. The country worked together under their President Paul Kagama and has turned everything around. Visit Rwanda, https://www.visitrwanda.com/
29. Ibid.
30. “The Black Plague” online at: https://www.youtube.com/watch?v=hF6vLt-YhRM
31. Ibid.

Chapter 23

1. Jackson, Patrick. "Living with Race Hate in Russia." BBC News. February 24, 2006. Accessed July 26, 2015. http://news.bbc.co.uk/2/hi/4737468.stm.
2. Sielen, Alan B. "Sea Change, How to Save the Oceans." Foreign Affairs. April 16, 2014. https%3A%2F%2Fwww.foreignaffairs.com%2Farticles%2Funited-states%2F2014-04-16%2Fsea-change.
3. The Covid-19 Virus changed the world. One of the best videos on this subject is: “A Deep Look into the Biology and Evolution of COVID-19” University of California Television April 2, 2020.

Online at: https://www.youtube.com/watch?v=m9A4FMpwcQM
Please heed the warning our great Earth Mother has sent to us. The viruses are her immune system warning us to not kill her plants and animals. We are passengers on this spaceship. We share this planet with the other passengers. We cannot continue to murder them. We must love them and love each other.

4. I had previously written a book that fully addressed international crime. “Pax Americana, The Military Industrial Complex and the War on Terror.” I chose not to publish this book after I received a threatening call from Pakistan. The call was from an individual who read the article online and claimed to be with Al Qaeda. He threatened to kill me. Criminals don’t care about the law. They think rules do not apply to them. That is the unfortunate story of many politicians and wealthy irresponsible individuals. The sole purpose of acquiring wealth is to do what Bill and Melinda Gates do with their Foundation. They use wealth to do good in the world. Gracias a Dios por todo y tambien por mi vida.