



Journey to Planet Earth

**Transcript for Episode 08:
The State of the Planet**

Abridged Version

Journey to Planet Earth is produced by

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I'm Matt Damon and welcome to Journey to Planet Earth. In this episode we will investigate some of the most critical questions of the 21st century. Are populations soaring out of control? Will there be enough water and food for future generations? And global warming -- a false alarm or a gathering storm? We will visit parts of the world suffering from human overcrowding, hunger and despair -- places where disease is rampant. But we'll also bring you stories of hope and courage -- and celebrate the beauty and diversity of the natural world. Ultimately, our story is really about why we as individuals and members of a global community should take these issues seriously before it's too late. I think we owe it to our children and grandchildren. So please join me now -- as we begin our journey.

(Series & Episode Titles)

(Sunrise)

Since the first of time, before our ancestors even thought of time, first light reveals a treasure almost beyond imagination -- the elegance of diversity and the rich tapestry of the natural world. Ours is also a world shaped by people -- by those who are strongly tied to the land -- who draw from its bounty -- suffer during hard times -- only to be renewed by the birth of each new generation. Yet all too often first light brings a more sobering reality -- that perhaps all is not well with the state of the planet.

Eugene Linden
Author/Journalist

I think that the Earth has been sending us distress signals and the distress signals have to do with the pressures of human population and the pressures of the human economy on the ecosystems.

Tom Lovejoy
The Heinz Center

If current trends continue, by 2050 something on the order of a third or 40% of all species will either have become extinct or will be on the threshold of going extinct.

Rajul Pandya-Lorch
International Food Policy Research Institute

More than 130 million children who are under the age of five will still remain malnourished by 2020.

Lester Brown
Earth Policy Institute

We are in effect, outgrowing the Earth. We need another planet but there's no other habitable planet that we can go to.

How could this have happened? How could our planet be faced with seemingly unprecedented environmental challenges? Perhaps it's best to start with numbers -- numbers that have literally shaped the human condition.

Today our numbers have surged to nearly six and half billion and our population is increasing by nearly 80 million people each year -- 220,000 each day. During the course of this program 15 thousand children will be born. However, most experts predict that in about fifty years our planet's population will level off at about nine and a half billion and then slowly begin to fall. Despite this extraordinary achievement -- there's a dark side to our victory over the population explosion -- and it's located in our planet's richest country -- the United States.

(New York City)

As a result of immigration and low infant mortality, over the next fifty years the United State's population is expected to reach 420 million. The implications are enormous.

Bob Engelman

Americans use a tremendous amount of energy, a tremendous amount of natural resources, more even than the average European or Japanese.

Fred Myerson

Georgetown University

The average person in the United States produces five times the global average of greenhouse gases. And when you compare it to Bangladesh it's more like a hundred times. When you add 140 or 150 million Americans to the world population, in terms of consumption, it's a really big impact.

Americans live in a hi-tech world of automobiles and factories requiring huge amounts of energy. Our life styles impose more than a hundred times the stress on the planet than many of those in the developing world. This raises one of the most fundamental questions of our time: can our planet provide future generations with even the basic necessities of life?

(Water Montage)

Though our planet is covered by an extraordinary amount of water -- over 97 percent is undrinkable seawater and another 2% is locked-up in our polar ice caps. Satellite imagery shows a more promising sight -- the vast amount of water vapor circling the Earth. The whitest areas indicate rain or snow -- the only source of our planet's freshwater. A closer view shows intense activity over the Amazon Basin of South America.

Peter Gleick

Perhaps the greatest failure of development in the 20th century was our failure to meet basic human needs for water for everyone. And the direct implication of this failure to provide basic human needs for water are water-related diseases. Three to five million people die a year, 20 or 30,000 perhaps a day, from water-related diseases that are easy to prevent.

We now live in a world where the quality of water can be considered a major human rights issue.

(Haiti)

Located 600 miles off the southeast coast of the United States is the Caribbean island nation of Haiti. This is the Western Hemisphere's poorest country and unlike Shanghai it suffers from severe economic depression and political instability. In the slums of Port-au-Prince, the nation's capital – a quarter of a million Haitians are at the mercy of local gang members who control all forms of commerce -- including the sale and distribution of safe drinking water. The children that live in these back alleys are the innocent victims of poverty. Their life expectancy is almost thirty years less than children born in the United States.

Homer-Dixon

Squatter settlements need large amounts of water, and you'll find that often rich groups and powerful groups who control the water resources will use their power to basically extract huge profits by selling water to the squatter settlements.

In Haiti -- a week's supply of water could be equal to a day's wages. When a nation can't afford to provide the basic necessities of life -- water becomes a rare and often unaffordable commodity. Fortunately, even in the world's poorest countries, there are small victories.

(Zimbabwe)

In a remote corner of Zimbabwe, in Southern Africa, during the dry season it may not rain for months. Yet there are communities in Zimbabwe that have found ways to cope with the lack of rain. In the village of Chinamora, the women who tend this communal farm have prospered -- even during times of severe drought. It happened because an elementary school principal decided to build a small dam.

David Jura

I built this one physically myself using these hands -- very tough. It all began in 1992 in April until 1995 on the fourteenth of December. That's when I put on finishing touches of this wall. It was pretty tough.

What David Jura did, was capture the spring run-off from local streams. By providing a reliable and sustainable source of water, David bettered the lives of the women of Chinamora. They are not unlike farmers throughout the world -- those who live on a thin edge -- an edge sharpened by unpredictable harvests -- and severe drought.

Bob Engelman

Forty or fifty years ago water shortage wasn't on anybody's radar screen. Heck, twenty years ago it wasn't on anybody's radar screen. That's typical of the way a lot of population and environment interactions are happening in the world. Things just get gradually a little bit more stressful in an ecosystem or an environment, but people figure they can live with them. And then suddenly some kind of tipping point is reached. Suddenly water that was available for generations just isn't there anymore.

(Water Montage)

To meet the needs of a thirsty planet, aquifers are being pumped out faster than nature's ability to replenish them. But these natural underground reservoirs hold more than 30 percent of the world's supply of fresh water. The depletion of underground water resources is not limited to poorer countries. Fly over the prairies of the United States and you'll see thousands of dark circles etched into the desert landscape.

(Ogallala Aquifer)

Each circle is cultivated land -- irrigated with water pumped from the largest aquifer in the world -- a gift left behind by melting glaciers during the last ice age. Called the Ogallala aquifer, it supplies water to 25 percent of the country's irrigated land. It helped make the Great Plains the breadbasket of the world. Each year irrigated farming draws almost a foot and half of water from this ancient aquifer -- while nature puts back in the form of rain less than half an inch. In the past fifty years the Ogallala aquifer has lost over a third of its volume. This has farmers worried -- they just don't know how long the water will last. The only thing they're sure of is that if things don't change the aquifer will ultimately run dry.

Lester Brown

What happens to water resources is going to shape our future in ways that I don't think we can now easily imagine.

This raises another question of great concern for the state of the planet. Can we provide enough food to satisfy the needs of our children and grandchildren?

(Food Markets)

If you were to visit the food markets of the world -- one thing would be immediately apparent. More food is available to more people than ever before. It's a testament to the ingenuity of the world's farmers, ranchers and fishermen.

Rajul Pandya-Lorch**International Food Policy Research Institute**

The current status of global food production is relatively good. You look at the population increase that has taken place in the last three decades, despite the addition of almost three billion people we have actually increased the available food per person, by almost 20%. Do we have enough food to feed the world? Yes. Does everybody have access to that food? Unfortunately, no.

Despite the global abundance of food -- more than 800 million people go hungry each day.

Radjul Panya-Lorch

It's not just a question of increasing food production or increasing production on the farm. It is getting that production out to the people and in cost effective ways.

Though feeding the poor remains a pressing challenge, much can be learned from the world's most populous country.

(Shanghai)

China is a country of newly found wealth. It's hard to believe that only four decades ago famine claimed a staggering 30 million lives. Today, abundance of food is both a monument to the country's economic boom and a glimmer of hope to the poorest countries of the world.

(Farming)

The Yangtze River Delta contains China's most fertile soil. On this flat, watery landscape, every available acre of land is under cultivation. The results are remarkable. In a country of over a billion and a quarter people, very few go hungry. Yet China's agricultural success does not come cheaply and it is at the center of fierce competition for water and land between farmers and developers.

Less than a decade ago these streets were surrounded by farms. They are now home to dozens of small and medium-sized industrial enterprises. Despite these problems, China has found ways to feed its population. The challenge for the poorer countries of the world is to somehow duplicate that achievement. It won't be easy, especially when an even greater threat to the state of the planet may be looming on the horizon.

(Chicago Heat Wave)

A few years ago, Chicago was at the epicenter of an extraordinary weather event. Almost seven hundred and fifty people died -- thousands more were hospitalized.

Nurse

This is the worst. Even plane crashes, train crashes, everything. This is the worst.

The victims did not suffer from a terrorist attack or an industrial gas release. Their deaths were due to a dramatic and unprecedented ten-day heat wave.

Since the Chicago tragedy, heat anomalies have struck dozens of cities like Paris, London, Calcutta, and Melbourne. Tens of thousands have died. The scientific community now tells us that we all live in a world where the level of carbon dioxide in the atmosphere is higher than it has been for hundreds of thousands of years -- and global temperatures are rising faster than at any other time in recorded history. The consequences of these human induced changes are becoming more and more profound.

(Glacier Bay)

The world's glacial regions have long been a treasure of natural beauty and biodiversity. Today they are also under attack.

Bruce Molnia
U.S. Geological Survey

Glacier National Park is a good example of how the Earth's surface is responding to climate change. Today there are about 20 glaciers left in the Park. A hundred and fifty years ago it was probably two and a half times that number. In other parts of the world we see between two and three degree Fahrenheit increase in temperature in the last century.

And as glaciers and polar sea ice melt, the world's oceans are slowly rising.

(Louisiana Coastline)

Thousands of miles to the south, Louisiana's coastal marshes and wetlands have always been prime breeding grounds and nurseries for birds and animals. Today they are slowly being covered by the Gulf of Mexico. Just a few years ago this bay was a sugar beet farm – and a pasture for grazing cattle. Each year over 25 square miles of Louisiana coastline are washed away.

Robert S. Jones
Terrebonne Parish Public Works

If a foreign country was invading the United States, and it was taking 5 or 10 square miles a year, nothing would be spared to stop that foreign country from taking the land. But when it's a process like the Gulf of Mexico taking it, people say that's natural. I disagree.

Tony Janetos
The Heinz Center

There's no question that sea level is rising. The big question is, is how fast will that continue and how big a sea level rise will we get over the next hundred, or even two or 300 years. I think one of the things we've really learned about the climate system is that our hands are on it. The implications of that are really quite severe.

(Montage)

Glaciers melting, sea levels rising, heat waves – these are only a few of the early warning signals of man's greatest environmental challenge. Fortunately, there are ways to respond to the dangers of global warming.

(Negev Desert)

The Negev Desert is one of our planet's driest regions. Though temperatures soar to over 110 degrees -- this has become the perfect laboratory for a team of Israeli scientists. Yosef Mizrahi is developing heartier types of plants and better irrigation techniques for areas of the world that may suffer from the severe affects of global warming.

Yosef Mizrahi

I'm doing this research to produce plants that can be producers when the warming tendency will go up in the globe. Here we have a plant that under these conditions can be a producer for you and it produces very nice and attractive fruit. I can open it and you can see how it looks. The flesh is edible and you can eat it.

(Iowa Hothouse)

While some scientists labor in the harsh desert climate of the Middle East, others are creating their own weather conditions -- in the middle of a far milder Iowa landscape. Here researchers are developing new high yielding varieties of soy, corn and wheat that are drought resistant and require fewer chemicals.

Breakthroughs in genetic engineering can go a long way towards feeding almost 80 million extra mouths each year -- even in a warmer world. But to help future generations slow down or stop global warming -- we need to conserve energy and limit our dependence on fossil fuels.

(Wind Generators)

Wind power provides one of several alternatives. In a remote valley in California four thousand turbine generators produce enough electricity to serve the yearly needs of about 84,000 households. Clean and renewable, it's a technology that could provide up to 10% of the earth's electricity within two decades. But wind power coupled with alternatives like solar energy and fuel-efficient cars represent far more than just a response to the challenges of global warming. It's a testament to the power of human ingenuity -- of man's ability to cope with our planet's most pressing problems. Yet in the end -- there are no easy answers -- no quick fixes.

(Closing Montage)

In many ways the most important challenge to the state of the planet is recognizing the seriousness of the problems that lie ahead.

Thomas Homer-Dixon

Climate change, water scarcity, land degradation, loss of energy supplies around the world because of the depletion of forests these are problems that are facing humanity as a whole.

Tony Janetos

What happens in China, what happens in India, what happens in Asia, and Europe, and South America affects us environmentally. It affects us economically. It affects us culturally. It affects our stability.

Bob Engelman

If I had to use one word to describe the environmental state of the planet right now, I think I would say precarious. It isn't doomed. It isn't certainly headed toward disaster. But it's in a very precarious situation right now.

In the end -- all we want is for first light to still reveal the rich tapestry of the natural world -- and with each new day -- a chance for every child born into poverty to share the same dreams we in the West so often take for granted.

What we need are the efforts of people everywhere -- all those who are willing to find ways to strike the right balance -- between what we want -- and what nature can provide. Though separated by distance and culture -- for the six and a half billion people who draw sustenance from the resources of the world -- there are common bonds. Bonds that are renewed by each generation -- bringing new ideas -- new attitudes -- new hope. Planet Earth. This is our home -- this is where our journey of discovery must begin.

(Web Site Announcement)

To discover more about today's featured stories, educational resources, or download teacher's guides and other information about the environment please join me on the Journey to Planet Earth web site at pbs.org.

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