



Journey to Planet Earth

**Transcript for Episode 01:
Rivers of Destiny**

Abridged Version

Journey to Planet Earth is produced by

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(River Montage)

To enter the magical world of rivers is to experience their rhythm, their power, their extraordinary beauty. Though many rivers look lush and robust, they are in fact fragile and delicate environments.

From high above, space age information discovers newly emerging patterns of environmental change. Virtually every major waterway in the world is under attack.

Please join us now, as we journey to four great river systems. Along the way we will learn that the story of rivers is the story of unexpected -- unstoppable change -- the type of change that controls the destinies of the Mekong, the Amazon, the Jordan, and the Mississippi.

(Grafton - early morning)

The tiny fishing village called Grafton, where the Illinois and Mississippi Rivers meet, is still quiet -- its day not yet begun. In many ways, Grafton is no different from waterfront towns all over the world -- it's people are inescapably tied to a river.

(B & W stills)

In the beginning, they learned to endure the seasonal high waters of the Mississippi -- it was no more than an inconvenience -- a spring ritual. But then the river began to change. The year was 1927.

(B/W flood footage)

All along the Mississippi, floodplain cities were inundated, farms and industries destroyed, transportation paralyzed -- over 600,000 people became homeless.

(Footage of construction)

That's when the Army Corps Of Engineers stepped in to control the river. They started by building a series of locks, dams and thousands of miles of levees -- parallel mounds of earth and concrete sometimes twenty-five feet high. It was an enormous and innovative project. Nothing like it had ever been attempted before.

(Computer Generated Map)

Today, computer-generated maps help us look at the vast part of the continent they were trying to protect. Shaped like a funnel -- with the Rockies rising to the west, and the Appalachians on the east -- the Mississippi River basin drains thirty-one states and two Canadian provinces. This was the battleground in the fight between the Corps of Engineers and the river. But the end result was never clearly envisioned -- and the final cost was enormous.

(Clearing of wetlands)

Gone are irreplaceable breeding grounds and habitat for plants and animals. Gone are aquatic ecosystems that cleansed the river's water. Gone are woodlands that eased the burden of floods.

(Helicopter aeriels)

Today, more than sixty percent of the floodplain wetlands and forests have simply disappeared. In their place are twenty-two hundred miles of levees protecting millions of acres of rich farmland and hundreds of river front cities. But was the battle really won? There are no clear answers

(Brazilian spear-fishermen)

Forty-five hundred miles to the south of Grafton, the lives of the Brazilian spear-fishermen of Sao Miguel are also governed by the pulse of a great river -- the Amazon. They are stalking the Pirarucu, one of the largest freshwater fish in the world.

Since daybreak, the fishermen's attempts have been futile. They continue the hunt because one fish is equal to a week's wages. But deep within their silent vigil, the men sense that something is wrong with the largest river system in the world.

(River)

The Amazon River is enormous. Fed by the melting snow of the Andes -- three of its tributaries are larger than the Mississippi. The river discharges one sixth of the world's flowing fresh water -- and one day's release is enough to satisfy New York City's needs for 12 years.

(River journey)

As it enters the flatlands of Brazil, the river carves a maze of uncharted channels through the world's largest rain forest.

This is the primeval Amazon, the dark interior feared by early Western explorers. Today the indigenous people who once dominated these waters are experiencing a new darkness. Pushed aside by outsiders, they have almost disappeared.

(Rains begin)

Every year the Amazon undergoes a major transformation. For six or seven months, dense tropical rains dominate the landscape.

(Space visualization)

As the river rises -- satellites map the yearly cycle of water vapor circling the Earth. The whitest areas indicate severe thunderstorms. A pattern of intense activity emerges over the Amazon Basin of South America. For six months each year, rain is the driving force of the river.

(Flooded forest)

There are no vast engineering projects here, so the river is free to invade the floodplains, with as much as thirty feet of water. Such a deluge would torment the people of Grafton, but here along the Amazon, these yearly floods are a blessing.

(Underwater)

They give birth to an enchanting underwater forest. Fish swim among the trees -- snatching insects or fruit from limbs normally high above the forest floor. This rich -- almost inexhaustible feeding ground -- is the primary reason the Amazon is home to over three thousand species of fish -- three times more than in all of North America.

(Above water)

For centuries, the Indians who lived along these shores guarded the floodplain as a sacred source of food for their fish. Today, those who live here have forgotten that the fate of their fishery depends on the health of the flooded forest.

(Ranching)

For decades, these fragile lands have been plundered by ranchers and farmers -- outsiders who covet the fertile soil of the floodplain. Matching the loss of Mississippi wetlands, less than 30 percent of the trees along the lower Amazon River floodplain remain standing.

(Sea of faces)

Located in the heart of the Amazon, Manaus is a metropolis of over a million people.

(Manaus waterfront)

Almost everything that comes in and out of the Amazon passes through these waters.

Carlos Miller

We are right here in the fish market of Manaus. This is the interface of one of the major problems we have here in the Amazon, that a lot of people don't know about. A lot of people around the world when they talk about environmental problems in the Amazon region they talk about deforestation, they talk about burnings, about mining, but no one hardly talks about the problem of fishing that we have in the Amazon.

The fish arrive here, at the Port of Manaus in different sizes. Before we used to get very large fishes, and now we're getting very small fishes. This is a consequence of over fishing that we are having in this region.

(Poor fishing village)

In villages all along the Amazon, there is debilitating tropical heat -- and an undercurrent of desperation. The decline in the fisheries has caused problems and pressures for almost everybody. Life is hard -- unemployment a reluctant reality.

(Spear fishermen)

Five hundred miles downstream, however, the fishermen of Sao Miguel are doing better. Their patience finally pays off. Quickly converging on their prey, they will share the prize. Because of newly-acquired resource-management skills along this part of the river, this year's catch has actually increased.

Sao Miguel is a major success story. Its fishery has now been completely revitalized. Farmers and ranchers were encouraged to work together to preserve the integrity of the floodplain forest.

The problem of a dwindling Pirarucu population was solved by controlling the catch -- by outlawing gill nets and having the fishermen return to the traditional ways of their ancestors.

The issue of the destruction of the Amazon floodplain forests is hardly unique. It's happening all over the world. This poses the most fundamental question underlying the destinies of all rivers -- what is the relationship of people to nature -- what are the obligations of this relationship?

The people of Sao Miguel have responded by taking control of their own destiny -- by treating their land and water as a shared commons -- and by balancing the needs of the farmers and the ranchers with the fragile feeding grounds of the floodplain forests.

(Sao Miguel's children)

The community's success is echoed by the children of the village. "Good morning sun," they sing. "Good morning earth, good morning river."

(Desert)

Unlike the Amazon, there is place in the world where the quest for water is never ending.

(Snow-covered slope)

In this place, snow is an almost forgotten treasure. These are the 9,000 foot slopes of Israel's Mount Hermon -- rising precipitously out of a barren wilderness.

(Enhanced satellite images)

Enhanced satellite images give us a new way of looking at the Middle East -- a new perspective on how the Earth works as a unified system.

(Surging river)

Mount Hermon is the source of the river Jordan. Soon joined by the streams of Lebanon and Syria -- the river gathers volume.

(Sea of Galilee)

When the Jordan finally enters the legendary Sea of Galilee it is almost 700 feet below sea level. The lake is also a reservoir -- supplying one third of Israel's water needs.

Today, very little of the lake's precious water is allowed to escape. What little that is released into the lower Jordan River winds slowly through isolated farms, all competing for the sustaining waters of the same thin blue line.

(Jordan and Dead Sea)

The Jordan river ends its hundred and twenty mile journey at the Dead Sea. More than thirteen hundred feet below sea level, this is the lowest point on the Earth. Seven times saltier than the ocean -- very little lives within its waters.

Compared to most of the world's rivers, the Jordan is insignificant. More water flows down the Amazon in an hour than flows down the Jordan in a year. But this river, marking the border between Israel and the Kingdom of Jordan, flows in a part of the world where the health of a river is influenced by politics as well as by the environment.

Amman is the sprawling capital of the Kingdom of Jordan. With a rich cultural history dating back six thousand years, it is now a modern city of just over a million people. The vitality of the street life gives no hint that a growing population is consuming water at an alarming rate.

But it is in Jordan's countryside that signs of a serious water crisis become apparent. Farmers desperately try to coax crops from the arid land. Deep wells are depleting much of the underground water supply -- and what little remains is often undrinkable.

Forty miles from these water-starved villages is the spiritual home of Western Civilization -- the city of Jerusalem.

(Jerusalem)

To enter the gates of the old city is to step back in time. For thousands of years, the holy land has suffered the stings of political fervor. Despite all its problems, Jerusalem continues to beckon the faithful of three great religions. It's still a cradle of hope. If lasting peace is to come to the Middle East -- those who decide its fate know that water must be a shared resource.

Shimon Peres

Water, contrary to land, is undisciplined in political terms. The water moves in the stomach of the land from one place to another place without following the borders, without following man's divisions. Even the rains don't go through the customs. Now, unless politics will attune itself to the demands of nature, namely to use correctly the sources of water, to distribute it as it is needed, to keep the land fertile our children will live in a desert and the desert is the father of poverty and of want.

Just a few miles from Jerusalem, are the rocky slopes of the Jordan River's West Bank -- occupied by Israel since the '67 War. Here, the quantity of water is so small, that it creates not only a struggle between the water and the desert, but a struggle between people.

(Riots)

For years, the West Bank has been a battlefield between Palestinians and Israeli soldiers.

Though the Jordan River is little more than a creek compared to the Amazon or Mississippi, in a region so steeped in hostility and mistrust, equitable distribution of its waters may be the key to lasting peace.

Shimon Peres

We have to provide our children with the flow of water as a promise of their future and not to look anymore upon water as upon a gun, or a plane or a tank.

(Early morning along the Mekong River)

Unlike the Middle East, the guns along these shores have been silent for years. Deep in the heart of Vietnam's Mekong Delta, a flotilla of small boats cuts gracefully across the gentle current. It's a moment suspended in time -- rich, delicate, almost perfect.

Fifteen million Vietnamese live in the tropical wetlands of the Mekong Delta. Theirs is a world of water. The canals are their avenues; the irrigation channels -- their back alleys.

Nourished by the snows of the Himalayas, the Mekong is among the least developed of Asia's great rivers. Yet, it sustains people from six nations.

Since ancient times, the wetlands of the Mekong Delta have acted like sponges, storing and slowly releasing high water during the monsoons -- making it ideal for cultivating rice. The river not only irrigates, it refreshes the land with rich alluvial soil.

(Can Tho)

Clearly, the delta is in the early stages of an economic boom -- and Can Tho, the provincial capital, is bursting with a new vitality. Each morning, thousands of people gather along the river to buy and sell the readily available goods that were once so scarce. New trade pacts between Mekong River nations have made this possible.

In many ways, the Mekong is similar to the Jordan River. Both rivers run through several countries -- each with a different economic and political agenda.

(Rain & Floods and flooded village)

But recent upstream river engineering has also resulted in deforestation. Like the Mississippi and Amazon basins, the floodplains that helped regulate the ebb and flow of the Mekong are being cleared -- making the annual monsoon floods more severe -- and life more difficult.

(Fish farm)

For the fish farmers living near the ocean, the dry months present an even more serious problem. Upstream demands have reduced the river's flow -- allowing salt water from the South China Sea to invade the land.

Nuyen Van Dung recently filled his small fish pond with river water. When it's time to harvest his crop, he and his children drive the fish into gill nets. But the quality of the water is poor -- its salt content too high -- the family's harvest is meager.

(Water pumps)

To ease the growing problem, fresh water is now pumped from upstream locations into the farms of the lower delta. This has brought an uneasy truce with upstream development -- giving the six Mekong River nations desperately needed time to develop strategies for coping with the environmental threats that always accompany an increase in population.

(Mekong River)

Clearly the Mekong has a major role to play in Vietnam's economic growth. But as with all great river systems, whenever there is a change, the lives of the people along its shores are also transformed. Here in Vietnam, it is still too early to determine whether their lives will be better or worse.

(New Orleans)

Unlike the villages along the Mekong, the delta city of New Orleans owes its very existence to the engineering transformations of its great river -- the Mississippi. Surrounded by water and wetlands, the city is ringed with a levee system that has been under construction for almost three hundred years..

Much of New Orleans lies below sea level. Without its twenty foot walls, the city would be devastated by periodic floods or a major hurricane.

(Healthy wetlands)

In the past, the sediment-laden waters of the Mississippi were free to flow across the marshes of the Louisiana delta. Over time, the thick alluvial soils became fertile farm and ranch lands. The coastal marshes and wetlands became prime breeding grounds and nurseries for birds and animals.

(Lost wetlands)

Now scientists tell us that the levees are causing Louisiana's coastal wetlands to fall apart. Just a few years ago this bay was a sugar beet farm -- this marina, a pasture for grazing cattle.

Denise Reed

What would be happening in this area if we hadn't got levees all along the sides of the Mississippi River, over the next couple of hundred of years the Mississippi River would be building a new delta out into this area. By building the levees along the sides of the Mississippi, we've effectively excluded that expectation for areas like this, and really the future is just for it to turn to open water.

(Cypress swamps & dead oak trees)

The loss of wetlands along the Mississippi Delta is devastating. Ancient cypress forests are dying because of salt water intrusion. Dead oak trees are grim reminders of a once healthy coastline.

Denise Reed

So what we see now is salt marsh. Obviously, these trees did not grow in the situation that we now see them, they didn't grow with their feet in the salt water.

So they really are very good indicators of environmental change, and also, really of environmental change on the human kind of time scale

(Shrimp boat)

Tommy Plaisance is a commercial shrimper. He owns his own boat and treasures his independent way of life. But the marine spawning grounds are disappearing as the nutrient rich Mississippi waters are channeled away from the fishing grounds. On some days, his nets bring up barely enough shrimp for him to break even.

(Closing Montage)

Tommy Plaisance is no different from the fishermen of the Amazon, the Jordan, the Mekong and the Upper Mississippi. The quality of their lives is controlled by the destiny of their rivers.

Fortunately, scientists are beginning to understand how the Earth works as a unified system -- and world leaders are beginning to realize that environmental problems are blind to political boundaries.

Though the challenge of balancing economic growth with the health of a river can be a difficult struggle -- no one questions that the time has come to strike a balance between what we want and what nature can provide.

Despite all the change, the extraordinary thing about rivers is that they remain the heart, the soul, the cradle of civilization. They help feed nations -- they nourish the world.

And the people who work the rivers, who draw from their bounty -- they are anchored to their rivers by common ties -- ties that are renewed by the birth of each new generation -- bringing new ideas -- new attitudes -- new hope.

Planet Earth. This is our home -- this is where our journey of discovery must begin.

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