

WATER AND THE LIFE OF OUR PLANET

By

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Original research

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1) WATER AND THE LIFE OF OUR PLANET: INTRODUCTION

EXT: DARKNESS

Solid black background. Sound of GENTLE WAVES lapping with a melodious AUM CHANT gradually rising in amplitude as sound is built up by addition of voices resulting in a large polyphony.

Narration in English by a woman with an Indian accent.

NARRATOR

Our ancestors told us that before time, when creation lay dormant in the sleep between yugas, Vishnu rested upon the waters, and he was the water. This water, the life we have in common, is no less sacred today than it was back then.

INT: FACE OF WOMAN GIVING BIRTH.

AUM CHORUS fades out.

NARRATOR

The water from which our mothers brought us forth to light, the waters of our holy Mother Ganga,

EXT. FADE TO WIDE SHOT OF GANGES

NARRATOR

and the waters that constitute the chemical matrices of all life on this planet are the very waters that were at the beginning.

EXT. STATUE OF VISHNU

Zoom into face of statue of a Vishnu seated in a pose of calm meditation until shot reveals only his Ājñā or brow chakra then fade into next scene

NARRATOR

The waters remain and God remains. Like God, the waters were here before us, they are part of us, they constitute the possibility of

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NARRATOR (cont'd)
our existence, and we cannot live
without them.

EXT. GANGES

Fade to a wide shot of Ganges. Sound of running RIVER WATERS
begins to grow louder.

NARRATOR
In the age after time, when life
and consciousness have returned to
quiescence,

Begin gradual fade to black.

WATER sounds become gradually quieter while AUM CHORUS
polyphony begins once again to build and get louder.

NARRATOR (cont'd)
Ananta Shesha, the god who remains,
will again sleep upon the water,
and he will be the water.

EXT. Fade to black.

AUM CHORUS drops to silence as sound of WATERS increases
slightly in volume.

NARRATOR (cont'd)
Whenever the divine essence is
traced to the limits of human
awareness, we can pursue its
mystery no further than the silence
of its unending waters.

Volume fades gradually to SILENCE.

NARRATOR (cont'd)
When time is ended, when the world
is no more, when illusions have
ceased, all that will remain is
God. God is forever, and God is
Truth.

2) INT. WATER AND THE HUMAN SPIRIT

Screen fades to black and the phrase "water and the human
spirit" appears in caps centered in the top third of the
screen.

EXT. SACRED OBJECTS

Pictures of various religious symbols and sacred objects and sites associated with waters from ancient and modern religions. --Baptismal fonts, pools, baths, aspergils, chalices, etc.

NARRATOR

Water is the material prerequisite of life, and the understanding of water promotes the understanding of humanity in its relationship to the divine. The religious traditions of many peoples state that in the beginning there was god and there was water.

EXT. CREATION IMAGERY

Sequence of fades between images of creation scenes and symbology from various religions.

NARRATOR

Out of the living water, creation emerged and with it the life and consciousness of individuals. In the *Kurma Purana*, Vishnu rests upon the water and is the water. Likewise, the scriptures of ancient Egypt, Judaism, Christianity, and Islam begin with the waters of the deep and the ineffable presence of a voice that moves them. Creation is said to have begun with a word or a command,

Fade to black

SFX. Rising sound of gentle waters.

NARRATOR

but when that command was proclaimed all that existed, all that responded, and all that obeyed were the waters.

3) INT. THE FOUNDERS OF MODERN PSYCHOLOGY

Screen fades to black and the phrase "the founders of modern psychology" appears in caps centered in the top third of the screen.

Fades across founders of modern psychology: Janet, Freud, Adler, Jung, etc.

NARRATOR

When the 20th century relocated the divine to the depths of the psyche and reduced it to the nominal unity of a cognitive process, divinity was reborn as the unconscious. Even so, the prophets of these new creeds held that the epiphanies of their god, now present in the products of human consciousness--language, dreams, rituals, and the arts--often arose in the species of water.

4) EXT. THE ORIGINS OF WATER IN THE UNIVERSE

Screen fades to black and the phrase, "the origins of water in the universe," appears in caps centered in the top third of the screen.

EXT. BIRTH OF UNIVERSE

Darkness. The Big Bang. A blast of light grows rapidly from the center of the screen to occupy the entire screen and then fades into darkness. Stars begin to shine and the spiral structure of a galaxy begins to take shape. Soon bright flashes representing supernovae, the violent deaths of these first stars, can be seen. As the galaxy recedes into space, we see many such galaxies. On our approach to the Milky Way, the camera zooms in on the inner rim of the Orion Arm, down toward an animated solar system and finally into a NASA moon-mission shot of the Earth presented as a blue disk against a sea of stars.

NARRATOR

Life became possible when the first substances, the hydrogen and helium of the big bang, coalesced into galaxies and were reborn in the hearts of primordial suns as oxygen, carbon, nitrogen, and other building blocks of life. When these

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NARRATOR (cont'd)
new elements were distributed throughout the universe by supernovae, oxygen, the third most common substance in the universe, combined with hydrogen, and the immense chemical diversity of the cosmos followed from the creation of water.

5) INT. WATER AND THE ORIGIN OF LIFE

Screen fades to black and the phrase "water and origin of life" appears in caps centered in the top third of the screen. Fade into next scene.

EXT WATER DROPS

Pendent water droplets beginning their descent through air. Little background detail.

NARRATOR
Our ancestors sought life's beginnings in water,

INT. WATER DROPLETS IN ERLLENMEYER FLASK

Fade into droplets of water descending through an Erlenmeyer flask and striking the surface of a clear spinning fluid set in motion by a magnetic stir bar.

NARRATOR
and today those on the forefront of evolutionary theory, biophysicists and molecular biologists, also begin with water.

INT. EVOLUTION: THE CHEMICAL ORIGINS OF LIFE

Fade into an animation of water and simple carbon containing molecules, methane and carbon dioxide, combining with other simple molecules detected in the primordial atmosphere such as hydrogen, hydrogen sulfide, methane, and ammonia, into the simple organic molecules thought to be the building blocks of life. Next, the molecular structures of these simple prebiotic compounds become larger and more complicated with animations of recent theories that have been put forth to envision the emergence through self-replication of something like segments of the DNA

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strand. Magically (for lack of a better word) these molecules assemble themselves into a double helix and evolve from there into a single celled organism. **[Check contemporary speculation on the basic mechanisms for an plausible animated representation.]**

NARRATOR

Again, water is thought to be the precursor to genesis. Water is the the medium that sustains the intricate processes and molecular interactions that constitute the chemistry of all life that we know. The first life is thought to have occurred in our early ocean, the primordial matrix which nurtured the increasingly complex compounds and structures of carbon chemistry--the original constituents of life--until they took shape and formed a cell.

INT. EVOLUTION: PARAMECIA TO WHALE POD

Clip of a single-celled organism undergoing division. This fades into clip of other single celled organisms such as paramecia swimming en masse in a single direction. A series of rapid cross fades through a sequence of images follows, showing the evolutionary progression through multicellular organisms, invertebrates, vertebrates, fish, amphibians, reptiles, dinosaurs, primitive mammals, creodonts, to littoral carnivores such as ambulocetus, to a clip a pod of blue whales swimming in the same direction as the paramecia. **[Check contemporary speculation on the basic mechanisms.]**

NARRATOR

The limitless subtleties and possibilities of carbon chemistry finally emerged after they were realized as compounds within the aqueous substrates of living organisms. Over the course of time, the earth has become home to **[## millions of]** species. Since the emergence of the first cell, the chemistry of life has expanded to contain the **[## million] substances** estimated to comprise the metabolic inventory of life on our planet.

6) EXT. THE PLANETARY ECOSYSTEM: WATER AND THE AIR WE BREATH

Shot of sky and clouds. Camera tilts down onto the surface of sea shot from hundreds of feet above a calm, rippling surface. The camera zooms to the surface and fades into a shot of the surface from under the waves. This shot zooms to the surface and fades to a shot of a microscope and then fades into a video micrograph zooming in on a colony of individual cyanobacter bacteria cells (the blue-green algae that produced the first oxygen). Zoom continues to a microscopic image of a single cell, then fades back to long aerial shot of an extended algal bloom on the ocean surface.

NARRATOR

The incredible diversity of our world's ecosystems is a consequence of the evolution of chlorophyll more than three billion years ago in the bacteria of the ancient ocean. This green pigment allows plant life to take energy directly from sunlight by a process known as photosynthesis. Photosynthesis, the living chemistry of water, carbon, and sunlight, permits plant cells to consume carbon dioxide and convert it into sugars, organic molecules in which energy is stored and made available to the cell's metabolism, or life process. The byproduct of this process is free oxygen. In an episode of planetary history known as "the Great Oxygenation Event," simple aquatic plants, such as blue-green algae, changed the earth's earlier carbon dioxide-nitrogen atmosphere to the oxygen-rich mixture we now breath. The free oxygen liberated by photosynthesis also permitted an expansion of metabolic chemistry and the development of the evolutionary lineages from which contemporary multicellular lifeforms emerged. This oxygen and the availability of the oxygen producers as a food source allowed the evolution of predators, primitive organisms unable to find nourishment in the raw materials of nature, but quite capable of eating those that could as well as each other. Thus the evolution of

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NARRATOR (cont'd)

photosynthesis in the early ocean led to an unparalleled explosion of biological diversity; and our planet is habitable today only because the surfaces of our oceans remain home to blue-green algae and other phytoplankton, or microscopic plants, which produce the majority of our planet's oxygen.

7) INT. THE HUMAN BRAIN

Screen fades to black and the phrase, "the human brain," appears in caps centered in the top third of the screen.

INT. THE EVOLUTION OF THE BRAIN

Begin series of fades though representations/drawings/photos of the evolutionary sequence of the brains of primate forebears including comparison to brains of great apes.

NARRATOR

With the free oxygen that supported the evolution of animal life, came: nerve cells, the brain; the movement of life from the seas to the land, the evolution of amphibians, reptiles, and mammals; the increasing cognitive capacities of primates; in the past 200,000 years, human beings; and over the last 50,000 years, the evolution of modern language, consciousness, technology, and science.

INT. HUMAN AWARENESS

Zoom from an image/photomicrograph of a neuron into the nucleus of the cell through its substructures and fade into an image of Professor V.S.Ramachandran of U. C. San Diego.

NARRATOR

Neuroscientist, V.S. Ramachandran states, "With the arrival of humans, it has been said, the universe has suddenly become conscious of itself. This, truly, is the greatest mystery of all."

EXT. OCEAN AT DAWN

Fade back to substructures of the cell and, from there, zoom down through orders of magnitude to the atomic level where an animation reveals water's molecular behavior, to water molecules animation and then to a shot of a tranquil sea from a shore at dawn.

NARRATOR

Consciousness is indeed a mystery, but perhaps no less so than water and its place in the chemistry of life. How much do we really know about water and its relation to human awareness?

INT. WATER AND HUMAN AWARENESS

Shot of human body standing upright in profile. Zoom in on head which fades into a sagittal diagram revealing one of the halves of brain. Zoom continues down to the level of individual neurons and finally into an animation the fluid contained within the synaptic cleft between the neurons. Here we see an animation of the movement of various sodium, potassium, calcium, and chloride ions within cell mechanisms such as ion pumps and channels.

NARRATOR

Water is the substrate of brain chemistry, the electrical processes of human cognition move their ions through aqueous media, and everything we know can be known only through water.

EXT. DROUGHT

Shots of drought-stricken deserted city, barren crop lands, and livestock dead from dehydration

NARRATOR

As with life itself, consciousness begins with water. We remain who we are, our identities persist, only to the extent that our brain chemistry keeps its water. When that water leaves, life and consciousness go with it.

INT HOMO SAPIENS OR SENTIENT WATER

Illustrations of the evolutionary sequence from Homo Habilis through the Cromagnons culminating a in shot of Leonardo da Vinci's iconic human being, Vitruvian Man, followed by a fade into bubbles swirling in a tranquil pond or creek.

NARRATOR

Looking to the traditions of our ancestors, we might say that: through billions of years of evolution, the ancient divinity of water has reconstituted itself in the subtlety of human thought; and that consciousness has discovered its material conditions in the human brain. In us the chemistry of life has learned how to think. A definition of our species more suited to our age and the increasing urgency of the wisdom needed to confront the global water crisis might be that we are, in fact, sentient water.

INT. 8) WATER AND HUMAN LIFE

Screen fades to black and the phrase, "water and human life," appears in caps centered in the top third of the screen.

EXT. MAJESTY OF NATURE

Sublimity. Fade into a sequence of shots of glaciers, calving icebergs, waterfalls, torrential rains, and lightening. Followed by images of Jane Goodall, gorillas, waterfalls, chimps, and thunderstorms.

NARRATOR

Throughout human history, people have celebrated the gifts of water, life, and consciousness, in prayer and ritual, in their admiration for the majesty of nature, and especially in their enjoyment of the waters of oceans, rivers, and rains. Such feelings are ancient, and we have probably inherited them from our prehuman ancestors. Evidence comes from our relatives, the nonhuman primates.

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NARRATOR (cont'd)

Anthropologist Jane Goodall has observed that, in the presence of events such as great waterfalls or thunderstorms, gorillas and chimpanzees exhibit a fascination and excitement resembling reverence and awe. Whatever such wonderment, the appreciation of water, or the awareness of nature's sublimity may mean to members of our species, we are not the first to have had such experiences. --Nor are we now alone.

EXT. RIVERS

Zoom in on a small spring, waters bubbling up from the earth fade into purling waters of a Himalayan stream and fade into tranquil waters.

NARRATOR

The origins of our fascination with water predate our species; and our consciousness of nature, given the proper conditions, becomes our communion with it. Yet, today, many of us take water for granted. In the face of the Earth's burgeoning ecological crises, such attitudes are luxuries we can no longer afford. Our existence on this planet requires that we embrace water for what it is: a basis of all life, the wellbeing of our ecology, and human health and happiness.

EXT. 9) THE WATER CYCLES

Screen fades to black and the phrase, "water cycles," appears in caps centered in the top third of the screen. Under this, in smaller italics is the phrase, "Recycling is the Way of Nature."

EXT. THE WATER CYCLE

Fade into a representation of water cycle indicating transpiration from trees, perhaps rain forest, into clouds, rains, and, finally, a river where a herd of Elephants is playing and spraying water.

NARRATOR

Life consists primarily of water and requires water for the satisfaction of its fundamental needs. The circulation and distribution of water throughout nature and its unceasing flow through the metabolisms of all creatures are primary conditions for life on Earth.

INT. HUMAN CIRCULATORY SYSTEM

Animated diagram of circulatory system: transparent image of human body which reveals the circulation of blood.

NARRATOR

To understand the circulation of water in nature, we can begin with our own circulatory systems. The English poet, John Donne, said, "no man is an island." We might add that the circulation of fluids in individual organisms is never removed from the great cycles of water in nature. The water in us is never separated from the water flowing through nature, nor does any one of us ever leave the water cycle.

INT. HUMAN CIRCULATORY SYSTEM/PLANETARY HYDROLOGICAL CYCLE

Animated circulatory system from previous scene is now presented in a composite animation which also includes a depiction of the hydraulic processes of nature. This animation demonstrates the participation of the human organism in the planet's water cycle.

NARRATOR

Water goes from us into the earth, it departs in our exhalations, evaporates, forms clouds, and feeds the rivers and oceans. It is as

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NARRATOR (cont'd)

much a part of who we are as are the cells that contain it and the blood that circulates within us. Water passes between us, and the water within us is part of the water economy of the entire planet. Water belongs to every person and to all organisms, we share it with all living creatures, and it is, as such, the substance of our communion with all life on Earth. From the beginning, the same water molecules that have made our existence as individuals possible have been the source of life for countless other organisms. The water that now flows within us will serve our descendants and all life after us.

LOSS OF OCEANS

The Earth will remain our home only for as long as our oceans sustain life. [###] million years from now, the sun will expand and evaporate the oceans. If our descendants are to survive, they will have to take the water that constitutes and sustains them and return with it to the stars in search of a place where life can continue, a place hospitable to water.

EXT. 10) SHARING

Screen fades to black and the word "sharing" appears in caps centered in the top third of the screen.

EXT. WATER AND HEALTH

Screen fades to black and then fades to the next scene. Shot of people in Third World cooperating around a shared well, drawing water through traditional methods. Sequence of fades through modern communal wells in Third World, hand-pumped and machine-driven, and then through large structures of modern municipal water systems culminating in water running from a faucet into a glass of water held above a kitchen sink.

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NARRATOR

Water will always require our attention and care. Pure water allows us to eliminate toxins and remove pathogens from our bodies, homes, and communities. The distribution of water and our respect for it determines the quality of our relationships with each other. We cannot respect one another unless we protect, conserve, and fairly distribute the water that we have in common.

EXT. SCENES OF POLLUTION

Scenes of pollution and its consequences, industrial, agricultural, etc., followed by shots of children suffering from the effects of polluted water or lack of adequate clean water for hydration and sanitation.

NARRATOR

In many parts of the world, the poor are forced to drink water that has been contaminated by metals and organics from industrial and agricultural processes or water that has not been freed from parasites, and their health declines. When they are denied abundant clean water, sanitation suffers, and their children die from dysentery.

EXT. 11) OUR MISSION

Screen fades to black and the phrase, "our mission," appears in caps centered in the top third of the screen.

EXT. REMEDIATION

NARRATOR

Over the past several centuries, unwise agricultural and industrial practices have seriously depleted the world's aquifers; these processes are being expanded; and their damage is increasing. If we are to survive in the new millennium, we must develop and

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NARRATOR (cont'd)
implement real, large-scale solutions for the preservation of pure ground and surface waters as well as for the remediation of the damage that has already been done.

EXT. ACCESS

NARRATOR
We must develop practical, long-term, cost-effective, and affordable solutions to correct this damage and preserve the health of the water system for ourselves and our descendants. Yet, an equitable distribution of water will not succeed without addressing the special social and economic needs of those hardest hit: the disadvantaged, including women, minorities, and the poor.

EXT. EDUCATION

NARRATOR
Likewise, an equitable distribution of water will not succeed unless all understand their responsibilities to water and to each other. We must educate ourselves and others about the necessity, subtlety, complexity, and history of water along with the overwhelming urgency of protecting it.

EXT. DIALOGUES

NARRATOR
The water we have in common should never divide us. We must all come together if we are to learn from each other. To succeed at an equitable sharing of water, we must encourage and sustain dialogs between peoples and nations, between religions, and between science and the religions of the world to allow for a careful and

(MORE)

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NARRATOR (cont'd)

thorough inquiry into human rights and human values as well as to create comprehensive understandings and respect between peoples.

EXT. HAPPY CHILDREN

Shots of happy, healthy, well-nourished children, urban and rural, from various cultures around the planet enjoying themselves.

NARRATOR

We came from water; it purifies and nourishes us; it quenches our thirst in body and in spirit. Water defines the fundamental terms of our communion with each other, with all life, and with our planet. Water knows no social distinctions or national boundaries; its only limits concern its ability to sustain life and the limitations we impose upon our own humanity by denying it to others. There is no way for us to be clean, physically, morally, or otherwise, unless we respect, ensure, and do not restrict or limit the common claim that all life has on water. Our respect for the happiness, well being, and dignity of other humans depends on ensuring their access to clean and abundant water. We must seek actively to share water in ways that guarantee the health of our ecosystems and the vitality, livelihood, and prosperity of all people.