

World Goodwill

NEWSLETTER

BY THE GRACE OF WATER

Seen from space it is water that is the outstanding, defining characteristic of our planetary home, giving it that instantly recognisable blue hue. As the author, Kirkpatrick Sale, writes: the “enormous continuum of eternal but ever-changing water” makes the Earth “a sight unique in all the known universe”. Indeed, he suggests that “what we call the planet Earth should more properly be called the planet Water – for it is the blue and white that define this orb – and the brown and green, though not without their significance for us, are, from the heavenly perspective, only secondary, interruptions in the azure panorama”.

Water makes life as we know it possible on our planetary home. Human beings, animals, plants, and the ecosystem in its totality, all depend upon it. As Michael Parfit writes in *National Geographic*, we live “by the grace of water”.

This issue of the Newsletter features aspects of the relationship between the human kingdom and the element of water. It highlights a pervasive and profound change beginning to take place in this relationship, and it features many initiatives that apply the energy of goodwill to the work of resolving the planetary water crisis.

Today, and throughout the ages, images of water have nourished the inner worlds of heart and mind. They have been pivotal in the collective dream life, religious traditions, art and literature. Our ancestors, like us, have sought and found recreation, inspiration and a sense of inner peace in the presence of rivers, lakes and oceans. Yet, particularly in this century, we have organised human affairs as if we were blind to the intrinsic, elemental

qualities of water. We have regarded it as if it were a free and unlimited resource for the sole use of humankind. Single-mindedly we have tried to tame, dominate and control its cycles and flowing rhythms.

We now count the cost. We are running out of fresh water and destroying the ecosystems of oceans, river deltas and wetlands. Already several countries face serious water shortages – more will in the near future. The poorest communities are still without adequate water for basic health. There are well founded concerns that there will not be enough water to grow the food needed by an ever increasing population. How will we cope with the future water needs of all life on earth?

It is partly in response to this crisis that a new approach is emerging. It is beginning to be recognised that human activity must adapt to the supplies of water available. With care and respect for its intrinsic properties and with right planning at a local, national and global level, the water available can sustain an adequate lifestyle for the entire population of the planet as well as healthy natural ecosystems. We live by the grace of water. Now we are challenged to give water its full due in our plans for the future.

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THE MYSTERY OF WATER	2
FRESHWATER CRISIS	4
GOODWILL INITIATIVES	7
AQUARIUS, THE WATER CARRIER	8
THE OCEANS & THE UN LAW OF THE SEA	9



THE MYSTERY OF WATER

Every drop of moisture is in itself a tiny life, fulfilling its function and running its cycle.

Alice Bailey

The touch and sound of water, its images, its gifts to language and the symbols it embodies are vital to spiritual well-being. The symbolism of water flows through the many different religious teachings. "Water is the source of all life", states the Koran. God is spoken of as "the fountain of living waters" in the Christian Bible. "I am the taste of living waters..." declares Krishna in the Bhagavad Gita.

The lakes, the rivers and the seas are sacred in the traditions of indigenous peoples throughout the world. Their stories reflect the view of Gwichin Indian chief, Clarence Alexander: "Water is a living thing.... You have to treat it as such.... We treat it like it's got a soul of its own."¹

Carl Jung, the psychologist, described the maternal significance of water as "one of the clearest interpretations of symbols in the whole field of mythology". For the ancient Greeks the sea was the symbol of generation. In the Vedas the waters are referred to as *matritamahi* – the "most maternal". The projection on water of the mother image invests it with many qualities of the mother and the goddess. Water is the nourisher. It brings new life as in the symbolism of baptism, whether that be in a church, in a sacred river such as the Ganges, or a sacred lake such as Manasarovar in Tibet. For the pilgrims who make the arduous journey to Lake Manasarovar its clear water is believed to be blessed with miraculous healing powers. To drink it is to experience "something beyond plain water, more like drinking in light, as if the essential purity of wind, space and sky had somehow been captured and condensed into liquid form".²

The thrust of our materialistic culture may seem to have displaced completely this timeless experience of water as honoured, hallowed, sacred. Today water is traded as a commodity, the oceans are used as dumping grounds, rivers are polluted and acid rain kills lakes. Yet this is aberrant behaviour, based on shallow thought and short-term materialistic values. It has no root in the rhythms of life that sustain the natural world and with which future human societies must find harmony. Indeed, although so much energy and effort today is channelled in patterns that debase the natural world, public opinion is changing. There is heartfelt aspiration for that harmony, a spiritual thirst for the rediscovery of the sacred. Advertising agencies use images of water so frequently because these images reach deep into the human psyche and touch our deepest desires for inner peace, purity and renewal. From this perspective, pioneering work being done to explore the mystery of water and the promises of great good that it holds, can be seen to symbolise a profound reorientation taking place in human consciousness.

One of the strangest substances

Water may be thought of as ordinary, yet it has been called "one of the strangest substances known to science".³ It is powerful. A major river system like the Columbia "spends about as much energy every half-hour falling from its mountain sources to sea level as was released by the explosion of the Hiroshima bomb".⁴ In its solid state - ice - water is lighter than when liquid. This is a "virtually unique property" amongst all known substances. It means that ice floats. "If ice did not float on water, it would sink to the ocean floor where it would accumulate, gradually freezing the seas from the bottom up. The fact that ice stays on the surface has another advantage. It protects creatures in the water from the extremes of temperature above. Were it not for this most unusual property it is doubtful that life in the oceans could have evolved very far at all."⁵ The supercritical state (high temperatures and pressure) endows water with seemingly bizarre characteristics, one of the most useful of which may turn out to be the fact that it can dissolve almost anything. Research is being carried out by chemists on both sides of the Atlantic to assess the use of this property in the destruction of hazardous waste, explosives and chemical weapons.

Cold fusion

There are many initiatives that explore the mystery of water, its extraordinary characteristics and the potential benefits they offer. While it is difficult to evaluate pioneering efforts in any field, the fact that many findings are seen as a threat to vested interests and existing practices means that much of this research has been subjected to ridicule. This was certainly the case when chemists Prof. Martin Fleischmann and Dr. Stanley Pons reported producing large amounts of excess heat by passing a current through heavy water (water in which the hydrogen is replaced by its heavier variant, deuterium). Their claim to have produced nuclear fusion in a test tube – "cold fusion" – provoked one of the most bitter debates in 20th century science. Ignored by their critics they, and dozens of other scientists, continue their research into the possibility that the anomalies their work reveals may lead to an abundant new energy source.

The memory of water

Dr. Jacques Benveniste is another scientist whose work has been vilified by the scientific establishment. His research led him to conclude that water can store and 'remember' electromagnetic and biological information. His work suggests that water can be imprinted with

'zones of coherence' which enable it to function in some manner as a communication system within both the cell and the body. The efficacy of homoeopathic medicine could be seen to support this idea of the 'memory of water'. Homoeopathic medicines are made by the process of potentization, in which the medicine is repeatedly diluted with water. The greater the dilution, the stronger the medicine, the strongest dose being the most diluted. Strong doses are unlikely to contain a single molecule of the starting substance. Hence the suggestion that in these high potencies it is the water's 'memory' of the medicine which provides the healing properties. A paper by Dr. Peter Fisher of the Royal London Homoeopathic Hospital cites scientific investigation of the hypothesis that "the microstructure of water is able to retain information concerning substances with which it has been in contact".

Labour and birth in water

Dr. Michel Odent is a pioneer in the use of water in the birthing process. Noting how many women in labour were attracted to water while he was working in the state maternity hospital in Pithiviers, France, in the 1970s, he had a paddling pool installed for their use. This was the first hospital birthing pool. His experiences in the hospital in Pithiviers showed that the use of the pools during labour drastically reduced the need for painkillers. In itself the reduction of both stress and use of drugs has significant implications for the well-being of the new-born child. As a result there is growing interest in 'water births'. In 1992 a British Government health committee recommended that all hospitals provide women "with the option of a birthing pool where this is practicable". Although only a minority of women chose this option, in 1992 and 1993 over 8,255 women laboured in a birthing pool and got out of the pool for the birth, while 4,494 gave birth to their child in the water. Dr. Odent sees the value of water in the birthing process as having its basis in the fact "that human beings have to live with two brains: the old, primitive, emotional brain on the one hand, and the new brain, the highly developed neocortex on the other hand. The neocortex has the power to inhibit or repress the instinctive brain in a great variety of situations, such as giving birth.... Water is the primary mediator or harmonizing agent in the relationship between our two brains".⁶

The shaping of water

The insights of Victor Schauberger (1885-1958) have been an inspiration to researchers exploring the livingness of water. Schauberger was born into an aristocratic Bavarian family which had moved to Austria and had become involved in forest husbandry. His many experiments and inventions drew on observations of water and the forest. For Schauberger nature is our foremost teacher. His understanding of the rhythms and nature of water led him to see that it was "the shaping of water which was all-important. It was quite wrong to pump water in ordinary steel pistons – that shattered it. He invented a pump that would shape the water in hyperbolic centripetal motion,

and this living water if used in our daily life would transform us, as water allowed to flow in its natural spirals restored the Austrian forests".⁷

One remarkable book on this subject is Theodor Schwenk's *Sensitive Chaos: the Creation of Flowing Forms in Water and Air*.⁸ With a preface by Jacques Cousteau and endorsements by, among others, Gaia theory proponent James Lovelock and Dr. John Todd, founder of the Centre for Restoration of Waters, *Sensitive Chaos* outlines the common principles and rhythms which underlie the natural movement of water in rivers and streams, the sea, in a plant and in the blood of a human being. The subtle patterns of water in movement are shown to reveal unifying forces and natural laws which underlie all living things.

Both Theodor Schwenk and John Wilkes draw on the inspiration of Rudolf Steiner in their work. For over twenty-five years, John Wilkes has pioneered research into the subtle rhythms and livingness of water. Working with the Flow Design Research Group and the collaborative efforts of Associates in some twenty countries, well over six hundred projects have been implemented for research and application in the fields of "biological sewage treatment, farming and gardening, as well as interior design related, for instance, to air-conditioning".⁹

The flowforms which John Wilkes and the Flow Design Group have developed are "vessels designed to generate rhythms in water streaming through them. Thus organisms may be provided with rhythm-and-oxygen-penetrated water as steps within a revitalising process. In heavily polluted waters this activity supports bacterial, plant and animal organisms in the breakdown of foreign substances. In relatively clean water the intensive movement aims at helping re-entry into the natural cycle". Their research has shown that "rhythmical movement, generated as it is through the harmonic interrelationship of polar forces (that is centric and peripheral forces) has an influence upon water's sensitivity and ability to support organisms".¹⁰

- 1 *National Geographic Special Edition*, November 1993, p.117.
- 2 Russell Johnson & Kerry Moran, *The Sacred Mountain of Tibet*. Rochester, Park Street Press, 1989, p.46.
- 3 Peter Russell, *The White Hole in Time*. London, Aquarian, 1992, p.216.
- 4 Michael Parfit, *National Geographic Special Edition*, November 1993, p.117.
- 5 Peter Russell, *op cit*, p.216.
- 6 Michel Odent & Jessica Johnson, *We Are All Water Babies*. Limsfield, Dragon's World, 1994, p.9.
- 7 Peter Redgrove, 'Faithful to the Quiet Forests', *Resurgence*, Jan/Feb,1991, p.7. See also: Callum Coats, *Living Energies: An Exposition of Concepts Related to the Theories of Victor Schauberger*. Bath, Gateway Books, 1996, & Olof Alexandersson, *Living Water: Victor Schauberger and the Secrets of Natural Energy*. Bath, Gateway, 1990.
- 8 Theodor Schwenk, *Sensitive Chaos: The Creation of Flowing Forms in Water and Air*. London, Rudolf Steiner Press, 1965.
- 9 John Wilkes, 'Flowforms', *Resurgence*, Jan/Feb,1991, p.12. For information: Flow Design Research Group, Emerson College, Forest Row, Sussex RH18 5JX, UK. T: (+44 1342) 823078.
- 10 *ibid*.

A stream, bubbling merrily over the stones, forms countless inner surfaces and tiny vortices, which are all sense organs open to the cosmos, and which perceive the course of events in the heavens. Water passes on the "impressions" it has received wherever it is absorbed by the earth and the plants, by the animals and man. In moving water the earthly world thus allows the ever changing life in the universe of the stars to flow into the course of its own life....

Water flows and streams on the earth as ceaselessly as the stream of time itself. It is the fundamental melody that forever accompanies life in all its variations. Unremittingly it belabours the solid earth, grinding, milling, destroying, levelling out, and at the same time elsewhere building up again, creating anew, preparing for life. As the life blood of the earth, in the great network of veins, it shifts unbelievable amounts of substance, which everywhere accompany the life processes of the earth and its creatures. In a ceaseless process it transforms the hardest rocks and the highest mountains into a flowing, finely ground stream of substance, and it dissolves finished forms, preparing them for new creation. Water is thus the great exchanger and transformer of substances in all forms of metabolism. Constantly dissolving and solidifying, washing away and re-forming, in perpetual transformation, water is ever-lastingly creating the organism of the earth planet. Is it not as though the stream of time itself becomes visible to physical eyes in this perpetual activity of water? Water always proves stronger than anything too solidly anchored in space, continually leading it back into the stream of time, of living development.

Theodor Schwenk

FRESHWATER CRISIS

The surface of the earth is awash with water. It covers almost three-quarters of the planet. Yet, on this watery globe, we are facing an acute shortage of the freshwater needed to sustain human life and activity at its present levels. We have been blind to the fact that the planet has a finite supply of this precious substance. Water has been taken for granted and used recklessly as if it were a limitless resource. Now we are regaining the ability to see water as it truly is. Our 'water sight' is returning – slowly. We are coming to recognise the need to adjust our lifestyles, individually and collectively, so that we can live within the limits of the water available.

A finite resource

The planet is awash with water but the freshwater of the atmosphere, rivers, lakes and underground aquifers represent just .000008% of all water. And only a little over one-third of this (the runoff from land to sea) can be drawn upon to sustain human and animal life. It is a remarkable fact that the amount returning to the sea as runoff after rains and snow remains constant year after year: "the land receives roughly the same amount of water today as when the first

civilisations emerged thousands of years ago".

Uneven distribution

There would still be ample freshwater to supply our needs if it flowed evenly through the areas where most people live. But, as Sandra Postel writes: "nature's delivery of water does not match up well with the distribution of world population". She cites Asia and South America as examples. Asia, with 60% of the world population, has only 36% of the runoff; South America with just 6% of the population has 26% of the runoff. On top of this much of the river flow in the tropics and high altitudes is virtually inaccessible and not able to be used.

Use of water has trebled

Population growth, the rise of megacities and a relentless appetite for food and consumer goods has led to an unprecedented demand for freshwater. Between 1950 and 1990 humanity's total use of water has increased threefold. What is more significant, from 1940 to 1990 per capita use of water doubled – the way modern society functions, each one of us uses more water than our forbears ever did. The

increase in use has been made possible by the construction of thousands of large dams. But the rate of building these dams is now slowing down – public opinion against dams is growing, there are few suitable sites left for large dams and environmental and economic costs make them increasingly less attractive to funders such as the World Bank. The slow-down in construction of big dams and natural limits of the runoff available mean that water use cannot treble again in the future – even though the world population is expected to increase in the next thirty years by the same number that was added in the forty years between 1950 and 1990 (2.6 billion).

Water stress

In 1995, 44 countries with a combined population of 733 million were officially classified as “water-stressed”. Water supply is already a critical problem for these countries – most of which find it impossible to be self-sufficient in food. Just over half of the 733 million in water stressed countries live in Africa and the Middle East – by 2025 it is predicted that three-quarters of Africa’s population will live in water-stressed countries. Outside of Africa there are large areas within specific countries that are also seriously water stressed – these include regions of the United States, China and India.

The poor suffer

Particularly in regions where water supply is relatively scarce, the water that is available tends to go to the wealthy, and the poor are left with polluted and unhealthy water. This is a result of the ethics informing contemporary economics. *Waterlines* reports that: “only 20 percent of current investment in water supply schemes is targeted at the poor”. Yet, worldwide, it is the poor that are most water-stressed. Approximately 25 litres of water a day are needed for one person’s basic survival level drinking and sanitation requirements. Adding hygiene and food preparation gives a minimum of 50 litres per person per day. Over a billion people lack this basic requirement. While the average daily use of a New Yorker is 300 litres, a British city dweller is 175 litres and a Bangladeshi rural villager 45 litres. Universal provision of safe water for drinking, sanitation and hygiene is the most fundamental health issue facing humanity. In 1993 UNICEF reported that 5,000 children died every day from diarrhoeal diseases attributable to insufficient safe water. In 1990, after ten years of global action in the UN Water and Sanitation Decade, 31% of the world’s people had no safe drinking water supplies and 43% lacked sanitation facilities.

Water to grow food

A key element of the water crisis is that as the population grows, so does the need for food. And more water is used for growing food than any other activity. World-wide, agriculture accounts for 65% of all water use. Food production increase this century has depended, to a great extent, on the development of large irrigation systems. “Irrigated lands account for only 16 percent of the world’s cropland, but they yield some 40 percent of the world’s food.” Grain

crops need large quantities of water – and in many areas natural rainfall has to be supplemented by irrigation. It has been estimated that 1,000 tons of water are needed to produce one ton of harvested grain.

Sandra Postel writes: “As of 1995, the world as a whole was consuming directly or indirectly (through animal products) an average of just over 300 kilograms of grain per person a year. At this level of consumption, growing enough grain for the 90 million people now added to the planet each year requires an additional 27 billion cubic meters of water annually – roughly 1.3 times the average annual flow of the Colorado River, or about half that of China’s Huang He (Yellow River). Grain consumption per person varies widely by country, but assuming the global average remains the same as today, it will take an additional 780 billion cubic meters of water to meet the grain requirement of the projected world population in 2025 – more than nine times the annual flow of the Nile River.”

Rivers drying up

Globally we cannot continue drawing off water at the present rate: “Water tables are falling, rivers are drying up, and competition for dwindling supplies is increasing”. *The 1996 State of the World Report* lists nine major regions in which water is being pumped from underground aquifers faster than it can be replenished. The damming and diversion of great rivers means that a number are completely dry, for at least part of the year, by the time they reach the sea. This includes the Ganges, the Yellow River and the Colorado River. There is the additional problem that, without proper management, irrigated land eventually becomes unproductive due to salt poisoning – as water evaporates it leaves a concentration of salts in the soil. Over 10% of the world’s irrigated lands are said to suffer sufficiently from salt poisoning to significantly lower crop yields.

Ecosystem damage

Industrial pollution, damming of rivers and over-exploitation of aquifers has interfered with the natural balance of water systems. Janet N. Abramovitz writes: “When we jeopardize a freshwater ecosystem’s integrity – its physical, chemical and biological elements and processes – we compromise its ability to support species and provide the products and services we depend on, services such as controlling floods, purifying water, recharging aquifers, restoring soil fertility, supporting recreation, nurturing fisheries, and supporting evolution.” She notes that it is the sheer scale of the human assault on freshwater ecosystems that is dangerous. Freshwater is the home for 12% of all animal species, and in recent years 20% of all freshwater species have become extinct or endangered. In California, 95% of wetlands have disappeared. In Bangladesh the regular drying up of the Ganges river delta causes salt water to destroy mangrove and fish habitats – with a disastrous effect on local people. The Nile river delta, vital to Egypt’s economy and food supply, is gradually disappearing into the sea because the silt which would normally replenish the soil and keep it fertile is trapped by the Aswan High Dam.

Water stress fuels tensions

When water is scarce, competition for access to supplies becomes increasingly tense and a potential source of violent conflict. An increasingly common source of tension is between the demands of agriculture, industry and cities. In the U.S. this has involved cities purchasing farmers' rights to the water on their land at exorbitant prices. Robin Clarke describes a pulp factory in India which constructed two reservoirs, drawing off water from the Chambal River. In the dry season when water is scarce, local farmers have no water for irrigation while the pulp factory's extravagant use of water continues. Factory security guards protect the reservoirs and at times assault the villagers. In poorer rural areas of the developing world it is not uncommon for village wells and water supplies to dry up as river water is diverted and water from underground aquifers drawn from deeper levels to grow export cash crops or to supply the growing needs of local cities. Competing claims for water will inevitably heighten tensions in the future.

The gravest cause of concern is the potential for international conflict over water. "Any river that forms a border between two countries courses through the middle of a watershed that spans those two countries. And any river that flows through two or more nations – as 214 do – is supported by ecosystems that cut across political boundaries." As the population of downstream countries grows and their demand for water increases they become increasingly vulnerable to the actions of upstream countries. Sandra Postel cites as potential hot spots: the Ganges, the Nile, the Jordan, the Tigris-Euphrates and the Amu Dar'ya and Syr Dar'ya. While there are innumerable treaties governing equitable use of international freshwater sources "in none of today's potential hot spots of water dispute does a treaty exist that includes all parties within the river basin".

APPLYING GOODWILL

There is an urgent need for goodwill energy to be applied to the task of adapting lifestyles and cultures so that we can all live within the limits of available freshwater. Sandra Postel outlines what, in her view, needs to be done. She calls for a global approach in which each nation, and the international community, makes a realistic assessment of the limits posed to food production and economic prospects by freshwater supplies. On the basis of this assessment she calls for three goals for future water use: "satisfying basic human and ecological needs; using and allocating the remaining water more efficiently, and sharing international waters equitably."

Global assessment

The process of initiating the research needed to prepare a global assessment of water limits began in 1965 with the UNESCO co-ordinated International Hydrological Decade. Over 3,000 studies were done. The Decade led to the 1977 UN World Water Conference when a number of key indi-

viduals and development agencies began to wake up to the water crisis. Earlier this decade, the 1992 Earth Summit in Rio, and the Dublin gathering to consider water issues in preparation for that Summit, culminated in a special section in Agenda 21, Chapter 18, recommending key principles for managing water resources sustainably. Later this year a thorough assessment of the situation, the first ever, is due to be presented by the United Nations Commission on Sustainable Development to the UN General Assembly. In recent years several major initiatives have been taken to bring together governments, UN agencies and key organisations to help co-ordinate a global water policy. Some of these initiatives are described elsewhere in this newsletter.

Blue revolution

Anthony Milburn, Executive Director of the International Association on Water Quality, has called for a 'blue revolution' in the way humanity manages its freshwater. In a recent paper he argues that, among other things, there is need for a transformation of attitudes and behaviour if "adequate freshwater of the right quality is to be available both for mankind and the rest of the planetary ecosystem". Citizen concern will have to be mobilised to put pressure on local, national, regional and international political processes. He proposes a Global Freshwater Convention, incorporating a Freshwater Treaty and a Global Freshwater Commission as a way of awakening public opinion to the need for a 'blue revolution' and of implementing the principles laid out in Agenda 21, Chapter 18.

Basic human needs

Sharing water to meet basic human needs was a key element of the 1980s UN International Drinking Water Supply and Sanitation Decade. The aim, "water and sanitation for all by 1990", was over-optimistic but there was a significant application of the energy of goodwill, and much was achieved. During the decade US \$10 billion a year were spent on efforts to reach the goal. It is estimated that 1.3 billion people gained safe water supplies and 748 million sanitation services although, due to population increase, there were more people without basic services at the end of the decade than at the beginning.

Important lessons were learnt during the decade. Water and sanitation programmes now form a major part of community work in developing countries. It is now common to adopt a holistic approach involving local communities in all areas of planning: how they will meet their water needs; and how they will help cover the costs, sometimes install, maintain and manage low-tech. water and sanitation facilities. In this way bringing safe water and sanitation to a rural or urban community has become a process of community awakening and transformation. A key element of many water projects is that women are now consulted and involved at every level of planning, implementation and management.

Efficient use

Much is being done to develop environmentally-friendly, water-sensitive and often low-cost appropriate technolo-

gies to use water more efficiently. These range from new toilet systems and showerheads, to drip-water irrigation (still costly), and traditional farming techniques which store and harvest water from even the lightest rains. There is increasing pressure for water-thirsty cash crops which earn foreign exchange for developing countries to be replaced by food crops suited to low rainfall areas. In urban areas up to 60% of piped water in developing countries and 12% in industrial countries is wasted due to leaking pipes and infrastructure – with investment significant savings can be made.

South African model

In 1996 South Africa's Minister of Water Affairs and Forestry announced a set of visionary principles to be implemented in a water law due to be presented to Parliament early in 1997. The principles include the aim to provide every South African with access to at least 25 litres of safe water a day, to allocate water to the environment, to reserve water for other countries that rivers flow into, and to price water at a level reflecting its true value and hence to reduce waste.

Environment

There has been little progress in allocating scarce water resources to the protection of ecosystems but there are cases where this has been done. In the United States, for example, Congress passed legislation in 1992 to take considerable quantities of water away from the Central Valley Irrigation Project in California to help sustain fish and wild life habitats. In "one of the planet's greatest envi-

ronmental tragedies," the Aral Sea Basin, where vast quantities of water are drained from rivers to irrigate cotton and rice crops, some progress has been made in creating wetlands and lakes for fish and wildlife.

Individual action

Resolution of the water crisis depends upon each of us becoming more conscious of our own water use and as a result, using water responsibly. Ultimately the ending of pollution and wasteful water use and the conservation of water will be achieved by the informed action of people of goodwill.

Most quotations are from: Sandra Postel, *Dividing the Waters: Food Security, Ecosystem Health, and the New Politics of Scarcity* – *Worldwatch Paper* 132, September 1996 & Sandra Postel, 'Forging a Sustainable Water Strategy' in Lester R. Brown et al., *State of the World* 1996. Both are highly recommended and are available from Worldwatch Institute, 1776 Massachusetts Avenue, N.W., Washington, D.C. 20036-1904, U.S.A. Other books and journals recommended for further reading include: Janet N. Abramovitz, *Imperiled Waters, Impoverished Future: The Decline of Freshwater Ecosystems* – *Worldwatch Paper* 128, March 1996; Robin Clarke, *Water: the International Crisis*. London, Earthscan, 1991; *Waterlines* (the only magazine devoted to appropriate technologies for water supply & sanitation and associated community development issues – a quarterly journal from: Intermediate Technology Publications, 103-105 Southampton Row, London WC1B 4HH, U.K.); Anthony Milburn, 'Securing a Blue Revolution Through a Global Freshwater Convention' – a paper delivered at the 1996 Stockholm Water Symposium and available from IAWQ, Duchess House, 20 Mason's Yard, Duke Street, London SW1Y 6BU, U.K.

GOODWILL INITIATIVES

A wide range of international, national and local groups are actively engaged in the process of building right relations between humanity and the element of water. Some of these groups have already been mentioned in the Newsletter.

WORLD WATER COUNCIL Formed in June 1996. A neutral and independent forum to advocate, assist and advise on global water issues. WWC involves government ministers and top officials in development of a global water strategy.

Conseil Mondial De L'Eau, Les Docks de la Juliette, 10 Place de la Juliette, Atrium 103, F-13304, Marseille Cedex 02, France
T: (+33 491) 99 41 00. Fax: (+33 491) 99 41 01.

IRC INTERNATIONAL WATER & SANITATION CENTRE Established in 1968 on the initiative of WHO and the Dutch Government. The IRC is an independent organisation for research, training and

advocacy focusing on the water and sanitation services of developing countries. It has played a highly influential, pioneering role in evolving a more people-oriented community-based approach to these development issues. In over 25 years IRC has shown that "the collective efforts of comparatively few like-minded people can have a major impact on seemingly intractable problems".

IRC, PO Box 93190, 2509 AD, The Hague, The Netherlands.
T: (+31 70) 3068930. Fax: (+31 70) 3589964.

GLOBAL WATER PARTNERSHIP Launched in August 1996. A non-political international network, originally proposed by the World Bank and UNDP. GWP develops programmes and services to assist developing countries in sustainable management of water resources.

GWP Secretariat, Sida, S-105 25 Stockholm, Sweden.
T: (+46 8) 698 50 00. Fax: (+46 8) 698 56 27.

WATER SUPPLY & SANITATION COUNCIL Formed during the 1980s Water and Sanitation Decade. WSSC is the global network of international funding agencies, non-governmental organisations, research institutes, and government agencies in the Third World working on water and sanitation issues.

WSSC, c/o WHO, 20 Avenue Appia, CH-1211, Geneva 27, Switzerland.
Fax: (+41 22) 788 0054.

WATER, ENGINEERING & DEVELOPMENT CENTRE. Established in 1971, WEDC is a key centre for research, training, education and consultancy on water and sanitation development issues. WEDC Conferences, held each year alternately in Africa and Asia, provide a major opportunity for fieldworkers to reflect together. At the 1996 Conference in New Delhi on 'Reaching the Unreached – Challenges for the 21st Century', 500 delegates gathered to discuss 65 papers – most of which described specific projects.

WEDC, Institute of Development Engineering, Loughborough University, Leicestershire, LE11 3TU, U.K.
Tel: (+44 1509) 222 885. Fax: (+44 1509) 211 079.

INTERNATIONAL RIVERS NETWORK The IRN was formed in the 1980s, by a group of engineers, environmental activists and scientists concerned by the ecological,

economic and social costs of large dams which transform river ecosystems. The Network works with local groups, at their request, helping them to build international coalitions to defend rivers. Publications include *World Rivers Review*, a quarterly newsletter, *Bank Check* advocating change in the World Bank's approach to large dam projects, and *Riverworks* a global directory of organisations working on river issues.

IRN, 1857 Berkley Way, Berkley, California 94703 U.S.A.

CENTER FOR THE RESTORATION OF WATERS Formed in 1981 by John Todd and Nancy Jack Todd (joint founders of the New Alchemy Institute) the Center is a not-for-profit global centre for water awareness and action. Ecological knowledge is applied to the solution of water pollution problems, particularly in the development of Living Machines for treatment of sewage and waste. A wide variety of living organisms, often including bacteria, molluscs, fish and numerous aquatic plants are brought together in a carefully designed "machine" for the purification of water. The first fully functioning machine was installed in Vermont, U.S.A. in 1987.

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AQUARIUS, THE WATER-CARRIER

We stand on the threshold of a new era. One of its most potent symbols is the sign of Aquarius, the server who carries on his shoulder a jar of water so full that it pours over, and yet the flow never diminishes. The water flows continually and in abundance. This brings to mind the image of a spring which draws upon an apparently inexhaustible supply of water from beneath the earth. In spite of its insignificant appearance and its tiny form the spring may be the source of a great river which brings water to a multitude. And without the spring that water would not be tapped. "The jar of water, posed upon the shoulders, is a sign of the burden of service. It is not easy to serve," writes Alice Bailey.¹ The skilled servers in the world, symbolically the Aquarian water-carriers, tap the limitless source of love and, through their efforts to create a better world, allow this "water of life" to flow to all who thirst.

¹ Alice Bailey, *A Treatise on the Seven Rays*, Vol. II, *Esoteric Psychology* II. New York & London, Lucis, 1942, p.120.

THE OCEANS AND THE UNITED NATIONS LAW OF THE SEA

"Life itself arose from the sea." It covers 140 million square miles or some 72% of the earth's surface. With its enormity and mystery, the ocean has ever been part of human consciousness. As a single dynamic medium, constantly on the move under the influence of the sun's heat, the Earth's rotation, and solar and lunar tides, the interdependent circulatory systems of ocean and atmosphere determine climatic flows right around the globe. At the same time, the great accumulations of sea-water, almost entirely placid beneath the surface, exert a major stabilizing influence on climate and act as a powerful buffer for what would otherwise be drastic fluctuations in our weather. Even the quality of the air we breathe, depends in great measure on the oceans of our planet.

"Not only has the sea always been a prime source of nourishment for the life it helped generate, but from earliest recorded history it has served for trade and commerce, adventure and discovery. It has kept people apart and brought them together."

The wealth of the oceans is immense. With their vast abundance of fisheries, minerals, and energy, the oceans are a remarkably rich resource of the planet. "Continental shelves harbour nearly half of the Earth's oil and gas resources, while seawater itself contains over 70 elements, some very important. One cubic kilometre of seawater holds about 230 million tonnes of salt; it also contains around a million tonnes of magnesium and 65,000 tonnes of bromine. We have extracted salt by evaporation for more than 4,000 years; today we also extract magnesium and bromine by chemical processes."

Unfortunately, through ignorance, misunderstanding and short-sightedness, we are placing the oceans' abundant wealth in jeopardy. We are causing "gross impoverishment of many fisheries, near extinction for most of the large whales, widespread pollution of fish-rich waters, and degradation and disruption of many coastal habitats and fish nursery grounds". Each year we dump hundreds of new chemicals into the seas, to go with the thousands already there, and with next to no idea of their potential impact. Human-made toxic substances are being detected in deep ocean trenches, even as far away as Antarctica.

The destruction of the ocean and its pollution have been grounded in the incompatible concepts that the

ocean and its resources are either nobody's property, available to be appropriated and used by the first occupant, or common property to be used for the benefit of all.

An awareness of the consequences of these conflicting concepts began to dawn after the Second World War when we came to realise that, for all their vastness, the resources to be found in the oceans were not inexhaustible. Along with heightened environmental concern, we also gained knowledge about whole sea-worlds previously unknown or largely unattainable on the continental shelves and the ocean bed. Perhaps most important has been the discovery of a vast treasure in small metal modules made up of manganese, nickel, cobalt, copper, iron and other minerals. Thus, disputes quickly arose about ownership, rights and management.

Competition for ocean space and resources has taken such forms as territorial and resources disputes, as well as conflicts between human fishing and the needs of marine mammals. A powerful symbol of such conflicts is the plight of the great whales. "A whale swimming in the ocean belongs to nobody; when it is killed, it becomes the private property of the whaler, and the profit accrues to the whaler alone." As the hunting intensifies extra effort is needed to find the next target and, most poignant of all, there is the risk of a whole species becoming extinct. Like many aspects of life on our planet, the ocean has been beset with both ecological and political crises.

Attempts at managing these crises have a long history. A significant milestone was marked when, in 1967, before the General Assembly of the United Nations, the representative of the island state of Malta, Arvid Pardo, proposed that the sea-bed and the ocean floor beyond national jurisdiction be reserved exclusively for peaceful purposes and that their resources be declared "the common heritage of mankind". This set in motion the formal process that led to the convening in 1973 of the Third United Nations Conference on the Law of the Sea (UNCLOS III).

Along with calling for the Conference, the General Assembly in December 1970 also approved a Declaration of Principles drawn up by a committee it had established three years earlier – the Committee on the Peaceful Uses of the Sea-Bed and Ocean Floor beyond the Limits of

The ocean is an indivisible resource which must serve the collective needs of humanity as well as the broader needs and interests of present and future generations.

National Jurisdiction, or the "Sea-Bed Committee" as it became known. As a result, the United Nations General Assembly filed the largest land claim in history. It asserted that all the sea-bed and ocean floor outside State jurisdiction were the "common heritage of mankind". It approved the creation of an international group to explore, develop and manage the area's resources for humanity's benefit. At that time this was a revolutionary concept and more time was spent at the Conference deciding on how to give the "common heritage" concept shape and form than on any other issue.

Law of the Sea

After many years of negotiations, the Conference participants adopted in April 1982 the Convention on the Law of the Sea with its far-reaching implications for peace and security, distribution of natural resources, navigation, transport, marine research and environment. With its 17 parts including 320 articles and nine annexes, the Convention forms a carefully devised series of interlocking balances and concessions, with the "common heritage" concept occupying the longest chapter.

Although the "common heritage" premise was not entirely new, its incorporation into international law is unique and the idea of its use for the benefit of humanity as a whole has become a powerful new motive force in international affairs, incorporating both a moral ideal as well as practical consequences. UNCLOS III has enabled us to progress a long way from what has been referred to as "the hopelessly confused situation of the 1960s". It gave us what the 1994 issue of *The Gaia Atlas* calls a "written constitution" for the ocean.

The Convention's significance goes well beyond its immediate maritime considerations. It is a prime illustration of a more important trend, one vital to international law: the establishment of multilateral treaties on international activity. It is evidence that rational minds can act creatively to overcome differences and master common

problems, thus fulfilling the aims of the United Nations Charter.

Significant complements to the work of UNCLOS III include the newly formed (December 1995) Independent World Commission on the Oceans and the Regional Seas Programme of the United Nations Environment Programme (UNEP). The Commission, seeking to bolster the UN Convention, is an independent body supported by Governments to accumulate scientific information on oceans and to promote their sustainable use. It will present its final report to the UN General Assembly in 1998 – the year designated as International Year of the Ocean. The Regional Seas Programme involves 130 states, 16 United Nations agencies and more than 40 international and regional organizations all working to improve the marine environment and make better use of its resources. This Programme represents a quantum leap in environmental diplomacy as it makes it possible for mutually hostile nations to sit down at the same table to resolve common problems.

The ocean is an indivisible resource which must serve the collective needs of humanity as well as the broader needs and interests of present and future generations. It is, in short, our common heritage and provides, therefore, what *The Gaia Atlas* calls "a sensitive litmus test of our developing skills in planet management". May we rise to the occasion and prove ourselves wise and skillful.

This article draws in particular on two publications from which quotations have been taken:

- Norman Myers (ed.), *The Gaia Atlas of Planet Management*. London, Gaia Books, 1994..
- United Nations, *A Quiet Revolution: The United Nations Convention on the Law of the Sea* (UN Publication Sales N° E.83.V.7 00500)

helping to build right human relations

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