



# **Save Nature source of water, source of life**

**A WWF Call to World  
Leaders on behalf of the  
Future of Fresh Water.**


**Fresh water is a precious resource needed by all life on Earth yet its future is far from secure. In fact, it is the source of a world crisis. For thousands of years, humans have exploited freshwater resources and ecosystems. Ancient human societies have traditionally recognised water resources in practical as well as symbolic ways. Failure by modern societies to deal with water as a finite resource is leading to unnecessary destruction of rivers, lakes and marshes that provide us with water. This failure in turn is threatening all options for the survival and security of plants, animals, humans - in fact all life - on Earth.**

**In spite of some progress, the majority of human beings face either insufficient amounts or poor quality of water. For some countries, recognition of a water crisis may have come too late. Neither lack of 'technologies' or financial resources can explain the crisis; it is due rather to ineffective management.**

**WWF is calling for a global response to this problem that recognises:**

- **Restoring and conserving the actual source of water - the water cycle and the natural ecosystems that support it - is the basis for sustainable water management;**
- **Environmental degradation is preventing us from reaching goals of good public health, food security, and better livelihoods world-wide;**
- **Improving the human quality of life can be achieved in ways that also maintain and enhance environmental quality;**
- **Reducing greenhouse gases to avoid the dangerous effects of climate change is an integral part of protecting freshwater resources and ecosystems.**

**WWF urges Leaders to make restoration and protection of the natural water cycle the guiding principle of water management for the future of people and nature.**



# Water - the vital resource

## **Fresh water is essential for all life on Earth.**

Without it, people, animals and plants cannot survive. The many functions of freshwater ecosystems - source of rich fisheries, natural water filters, and vast reservoirs for groundwater storage - would be destroyed or seriously impaired.

**Water is also essential for meeting human needs,** including eating and drinking as well as economic production and employment. Industries the world over, from agriculture to heat and power supply, depend on fresh water.

## **But fresh water is a finite resource.**

The availability of fresh water - both quantity and quality - is at the heart of the growing water crisis. Many reasons for this crisis are the unexpected results of development decisions that have led to environmental degradation. Unless we base our development decisions on their compatibility with freshwater ecosystems, environmental deterioration is likely to increase and accelerate, resulting in more human suffering world-wide.

## **What can be done?**

Despite the overwhelming evidence that environmental quality forms the basis for improving the quality of human life, and that biodiversity loss hurts people, much of the world still considers environmental protection and human development as separate and even opposing objectives. In fact, healthy ecosystems and human development depend on each other.

Industrial developments are often based on freshwater resources and provisions: any shortages or interruptions will have costs, economic and otherwise. The harm we do now to freshwater ecosystems through short-sighted development will come back to us at a much greater cost. WWF believes that conserving and protecting the natural water cycle and associated freshwater ecosystems needs to be seen as an economic imperative.



# Damaged water cycle; world-wide problems

Like a giant engine, working day and night to provide a life support system for the planet, the water cycle and the ecosystems that support it are essential to the availability of adequate freshwater. They purify it, recycle it and make it available to people, plants and animals. They are vital everywhere, from tropical rain forests to polar ice fields and moorland bogs. But the engine is misfiring. Today, freshwater ecosystems are among the most degraded of all habitats.

## Hunger and Malnutrition

World-wide, about 800 million people suffer from hunger and malnutrition. While advances in agricultural developments are likely to provide part of the solution, farming practices and the development and expansion of trade markets themselves create serious environmental, social and health problems.

Wetlands have been drained to provide agricultural lands. Land use changes, deforestation and conventional farming reduce the ability of catchments to retain and store water, leaving soils vulnerable to

erosion. Groundwater reservoirs are over-used to irrigate crops - often a highly wasteful and environmentally damaging practice. Pesticides and fertilisers added to crops invariably seep into surface and groundwater reservoirs, affecting local and distant biodiversity, and threatening the welfare of rural and urban communities. Furthermore, salinisation of soils due to inappropriate irrigation is making large areas of land infertile and degrading water quality.

## Inadequate Water Supply and Sanitation

One-fifth of the world's people do not have access to safe drinking water. Close to three billion people, half of the population, lack adequate sanitation. Environmental degradation is often the root cause of these problems.

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Water shortages are frequently caused by excessive withdrawal from surface or groundwater sources (often for agriculture), by habitat degradation such as the removal of vegetation cover that interferes with natural water recharge mechanisms, and by pollution. Inadequate sanitation leads to the spread of water-related disease through excessive discharges of bacteria and nutrients. Unregulated sewage discharge into rivers and lakes drastically reduces levels of dissolved oxygen and can kill fish. All of these factors combine to further limit the availability of safe drinking water for

human use. With a steadily growing population, the pressure on the Earth's finite freshwater resources continues to grow.

### **Floods - Destroying Lives and Property**

Disastrous floods are becoming more frequent around the world. Ironically, modern flood control structures may actually increase the scale of damage because many people who live in floodplains overestimate the level of protection provided.

Structures such as dams

and dykes are designed to protect from floods of a given magnitude and can fail when a flood exceeds their capacity, instantly creating extremely hazardous conditions.

In addition, the cumulative effects of changes in the water cycle in a river basin tend to create floods that, while shorter in duration, are much larger in their destructive potential.

Deforestation, urbanisation, wetland drainage, rechannelling of rivers, and the building of dams and dykes to control flooding, often combine to dramatically increase the destructive potential of floods.

### **The Consequences of Climate Change**

The Earth's climate is clearly changing as a result of man-made emissions of greenhouse gases such as carbon dioxide. Evidence of the potential for climate change to inflict damage on society is evident from the recent increase in extreme weather events around the world. During 1998, for example, natural catastrophes claimed the lives of about 50,000 people and

resulted in economic losses exceeding US\$90 billion. High winds and floods accounted for 85% of these losses. Changes in climate affect the water cycle, for example by increasing the frequency and severity of drought and floods.

### **The Crash of Freshwater Ecosystems**

Nature is not the only loser in the war on water. Casualties of destroyed ecosystems include not only plants

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and animals but human populations, especially in developing countries. The decline of freshwater ecosystems and biodiversity also has direct economic consequences. At the global level, the economic value of the renewable goods and services of fresh water and related ecosystems is estimated at US\$8.7 trillion per year - up to 26 per cent of the total market value of global renewable resources.

# Freshwater management

Nature has now sent us its invoice for development at a high price. While certain schemes have improved the quality of life for many people, they have entailed approaches that threaten to wipe out the very environment that sustains it.

We have built dams and weirs

and have channelled rivers to control the flow of water. We have, through deforestation and drainage of lakes and wetlands, reduced the capacity of the landscape to retain rainfall and recharge underground water supplies. We continue to discharge pollutants into aquatic ecosystems both directly and over land, through the groundwater and by atmospheric deposition. And we have released great quantities of greenhouse gases into the atmosphere, thus changing the climate of the entire planet.

The picture need not be so bleak. WWF believes that water management objectives, including the maintenance and provision of regular water supplies, improved sanitation, increased food production, and flood damage prevention and reduction - for the entire population - can be met by the year 2025, or sooner, in ways that restore and protect the water cycle and environmental quality. The forces that drive the water cycle do not observe country borders and thousands of freshwater bodies are a shared resource of several countries. No single organisation can be

responsible for the enormous challenges we face; even rich countries are struggling to sustainably manage their freshwater resources.

Positive change is possible if we recognise that sustainable water management begins with restoring and conserving the source of water. To maintain the water cycle and its natural functions, WWF is calling on the international community -

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governments, trade organisations, businesses, non-governmental organisations, and individuals - to make strategic shifts in natural resource use:

- **Make rivers safe:** Improve human health through the reduction and prevention of discharges of man-made pollutants in all major rivers and lakes.
- **Shift from irrigated agriculture:** Meet increased basic food needs using rain-fed agriculture, micro-irrigation, and production of wild fisheries.
- **Manage the demand:** Meet increased water supply needs through efficiency gains in urban areas, recharging aquifers in rural areas, and improving irrigated agriculture.
- **Promote renewable energy:** Meet increased energy needs by substantially increasing demand-side management and renewable energy sources.
- **Avoid flood damages:** Eliminate further loss of human life from floods using non-structural approaches and ecosystem restoration.

Environmentally sustainable alternatives are available, and achievable today, to implement each of these strategies. Depending on the context, these alternatives may be more cost-effective than conventional approaches and many organisations and governments have successfully used some of them on a small scale. Greater investments and stronger institutional frameworks are needed to apply these approaches more widely.

The following activities could lead to natural resource use that also restores and maintains the environment and the natural water cycle:

### Locally

- **Increase public participation and open decision-making:** Full involvement of local communities and individuals in strategic and project-specific discussions concerning water management, and transparency of decision-making.
- **Implement watershed management:** More programmes to protect and restore aquatic environments, including reforestation and watershed management, floodplain and wetland restoration, and maintenance of natural flow regimes.
- **Promote water and energy efficiency:** Greatly enhanced efficiency in the use of water and energy resources, through demand-side management, environmental protection and reuse or recycling of resources.

- **Increase use of renewable energy sources** such as solar and wind power.
- **Avoid flood damages while maintaining ecosystem viability.** Flood damage reduction can be achieved through restoration and protection of terrestrial and freshwater ecosystems and use of non-structural floodplain management to replace and complement conventional infrastructure.
- **Tackle water pollution problems at source** including agricultural run-off, atmospheric deposition and seepage from contaminated land sites, as well as from industries and municipalities.
- **Strengthen capacity:** Increase investment by public agencies, the private sector and academia in

***Environmentally sustainable alternatives are available and achievable today.***

understanding, restoring, and conserving freshwater ecosystems. Implement public education programmes about water issues and ways through which individuals can help restore and protect freshwater resources and ecosystems.

### Nationally

- **Practice integrated water resources management** by creating appropriate policies and institutions that are effective in river and lake basins. Use sustainable basin management practices in rivers and lakes by 2025.



- **Commit countries and communities** in rivers upstream to maintaining the environment on which neighbours downstream depend, including a clean and reliable water supply and a habitat that supports fisheries and shellfish production.

- **Implement an agricultural policy** that promotes environmentally sustainable food production appropriate to local conditions, including locally-adapted crops, agroforestry, and wild-caught fisheries, both for domestic consumption and export; and national support for sustainable agriculture technologies, such as integrated pest management.

- **Guarantee 'no net loss'** of freshwater ecosystems taking the year 2000 as a baseline for developing countries and 1960 for industrialised nations - the latter group of countries must restore significant natural values.

- **Implement comprehensive water pollution prevention and control** to eliminate all hazardous substances discharged by industry and municipalities and reduce by more than 50% the release of pesticides and nutrients from agriculture to all waters by the year 2025.

- **Reduce water losses** in distribution systems to below an average of 15 per cent in all major urban areas by the year 2025.

- **Charge real water prices:** Incorporate environmental costs and benefits fully in decisions concerning the development of all water resources projects and in the pricing of water supplied to all users by the year 2025.

- **Sign, ratify and implement international conventions and protocols** that contribute to the conservation of freshwater resources and ecosystems.

### **Internationally**

- **Increase funding by bilateral donors and international financing institutions** to promote locally-adapted practices and technologies such as rain-fed agriculture and renewable energy production.

- **Establish conflict resolution mechanisms** for water issues around shared rivers. This will greatly enhance the possibility of adopting integrated river basin management practices in all major rivers and lakes by the year 2025.

- **Create an International River (Water) Fund** so that countries can access resources for initiatives that meet development needs, especially for energy, as well as ensure conservation of freshwater ecosystems.

- **Restructure international (UN) organisations** so that one agency has the lead responsibility for natural resources management (land, water and air).

- **Reduce greenhouse gases** to avoid the dangerous effects of climate change and associated impacts on freshwater resources and ecosystems.



# Tackling tomorrow's crisis today

WWF's ultimate goal is to stop, and eventually reverse the accelerating degradation of our planet's natural environment and to help build a future in which humans live in harmony with nature.

As part of its work towards meeting this goal, the WWF network, which maintains a presence in 96 countries, has worked for nearly four decades to restore and protect wetlands and other freshwater ecosystems.

WWF's freshwater work encompasses the Pantanal of South America, China's Yangtze River, Australia's Murray-Darling River, Malaysia's Kinabatangan River, Zambia's Kafue River, the Rhine and Danube Rivers in Europe, the Mekong River in South-east Asia, and the Mississippi River and Florida Everglades in the United States.

The strength of WWF's achievements lies in its partnerships. For example, WWF and UNICEF are working together to address issues related to the water crisis and its implications for children and nature.

Also important to freshwater management are international conventions and processes such as the Convention on Wetlands of International Importance (Ramsar), the Convention on Biological Diversity, the UN

Framework Convention on Climate Change and the UN Commission on Sustainable Development.

## **WWF's Living Waters Campaign**

In May 1999, WWF launched its global Living Waters Campaign to highlight the crucial role of freshwater ecosystems in water management and to accelerate actions that tackle the water crisis. Working with partners around the world, the Campaign aims to achieve the following targets:

Demonstrate sustainable approaches to water management in at least five catchments - approaches that balance long-term human uses and biodiversity conservation; and

Increase, by 50 per cent, the area of the world's freshwater ecosystems that are newly committed for protection, restoration or effective management - commitments that include a total area in excess of 25 million hectares.

To find out how you can help support WWF's efforts in freshwater ecosystems conservation, please contact:

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[www.panda.org/livingwaters](http://www.panda.org/livingwaters)