Blue
Planet
Prize

MEDIA RELEASE

1998 BLUE PLANET PRIZE: ANNOUNCEMENT OF AWARD WINNERS

Dr. Mikhail I. Budyko (Russia)
For the establishment of physical climatology and the quantitative analysis of climate change

Mr. David R. Brower (U.S.A.)
For outstanding achievements in environmental conservation and pioneering activities that set an important precedent for international environmental nonprofit organizations

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Tokyo, June 10, 1997—The Asahi Glass Foundation, chaired by Jiro Furumoto, has chosen the recipients of the Seventh Blue Planet Prize, an international award first announced in 1992 at the United Nations Conference on Environment and Development in Rio de Janeiro. Presented annually to two recipients, the Prize commends individuals and organizations whose achievements have contributed to the resolution of global environmental problems.

1. **Dr. Mikhail I. Budyko**, Russia
   Dr. Budyko pioneered physical climatology, revolutionizing what had been the largely qualitative science of climatology by studying the heat balance of the Earth's surface and making quantitative investigations of climate changes. He also studied in depth the interrelatedness of the climate, the biosphere, and human activities. After quantifying the effect of human activities on carbon dioxide levels, Dr. Budyko made early predictions of the global warming phenomenon and issued a cautionary report in 1972. In addition, in the early 1980s Dr. Budyko warned that if a nuclear war were to occur, it would cause a climate change on such a scale as to threaten the extinction of humankind.
2. **Mr. David R. Brower**, U.S.A.
   Mr. Brower has been called "the most effective conservationist in the world today." He has endeavored to preserve nature and biological diversity, promoting environmental conservation in partnership with ordinary citizens while undertaking scientific analysis of the problems involved in environmental conservation. His efforts have resulted in the establishment of many of the United States' national parks and environmental laws. As his ideas about international nature conservation gained a wide following, the United Nations Educational, Scientific and Cultural Organization (UNESCO) created a system of World Heritage sites based on his recommendations. Mr. Brower helped point out the connections between environmental problems and societal and political issues while carrying out conservation activities on a global scale through the establishment of an international network of environmental nonprofit organizations.

In addition to public recognition, each Blue Planet Prize winner will receive ¥50 million, a trophy and a certificate of merit. An awards ceremony will be held at the Imperial Hotel in Tokyo on October 29, 1998, and the prize recipients will deliver commemorative lectures at the United Nations University in Tokyo on October 30, 1998.

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Remarks from the Award Recipients upon Being Notified of Their Selection

Dr. Mikhail I. Budyko

"I express my thanks to the Asahi Glass Foundation for the great honor of the Blue Planet Prize, in recognition of my more than 50 years of research activities in the earth sciences—including geography, geophysics, geochemistry, meteorology, climatology, ecology, anthropology, and others. Beginning from my first scientific steps up to the present time, I have endeavored to study energy transformation in natural processes that determine the main regularities of biosphere evolution.

"My research results regarding heat balance variations, calculated from incoming solar energy from between 1960 and 1970, has been used to explain climate changes in past geological epochs and in modern times. I also found that air temperature is highly sensitive to fluctuations in the heat balance. These conclusions correspond to the studies of Professor Syukuro Manabe, a prominent Japanese scientist in the field of atmospheric physics, and his colleagues. I later found that the main reason for fluctuation in the mean global temperature was increases and decreases in the carbon dioxide concentration in the Earth's atmosphere. This same factor is responsible for modern global warming. Taking into account forecasts of fossil fuel consumption, in 1972 I published predictions of global climate change for the end of the 20th century and the first half of the 21st century. These predictions were later confirmed by observational data.

"My long-standing contacts with leading scientists of many countries has had important significance for my work. I hope that in the future Japanese and Russian scientists will maintain and further develop the close ties that have had great importance for me in my research activities."

Mr. David R. Brower

"I am honored by this award and pleased to be in the distinguished company of previous Blue Planet Prize winners. In my nearly 86 years on this planet, I have seen human society face many challenges, but of all the battles of history, none is more important than the one we now fight to conserve, preserve, and restore the natural world. The miracle of evolution enables us to survive on this planet; a delicate balance we must strive to maintain. My friend Tom Hayden once said, "All I have been able to do in my career is to slow the rate at which things become worse." So far, that has been true for me and the environmental movement. Fortunately, this need not remain true. We can learn more about how to restore some of what we have displaced during our insatiable quest for ever more. I'm not blindly opposed to progress, just opposed to blind progress—something that happens whenever we fail to consider the costs to Earth and the future.

"Earth Island Institute is designed to encourage innovative ideas and rescue opportunity from despair. As we near the new millennium, we are faced with the statistics of global population growth, a widening disparity between rich and poor, and a planet whose ecosystems are systematically being dismantled. We owe it to ourselves to give the Earth a break, and we owe it to our children to consume less and to care more.

"By accepting the 1998 Blue Planet Prize, I feel free to argue that we can indeed create a future by design, not by default, and will enjoy the game."

Profiles of the 1998 Blue Planet Prize Recipients

Dr. Mikhail I. Budyko (Д–р. М И. Будыко)

(Born in January 1920 in Gomel in the former Soviet Union (now Belarus)
Head of the Division for Climate Change Research, State Hydrological Institute, St. Petersburg

As shown by the unusual weather patterns caused by the El Niño effect, a wide spectrum of climate changes on Earth is having a profound effect on human lives and the environment. Since the 1970s, great advances have been made in climatology, the scientific study of the close relationship between climate and the environment. Playing a pivotal role in the development of climatology has been Dr. Mikhail I. Budyko, one of this year's winners of the Blue Planet Prize.

In the 1950s, Dr. Budyko conducted quantitative studies of the global climate by calculating the heat balance of the Earth's surface. This balance involves energy from the sun, which is the most important determining factor for the Earth's climate. First, Dr. Budyko calculated the energy balance of certain regions of the Earth, and then he verified his calculations by making comparisons with observational data. Next, using weather data collected from all over the world, Dr. Budyko carried out heat balance calculations for all regions of the world and confirmed that they checked out with observational data. He announced his findings in 1956 with the publication of his book *Heat Balance of the Earth's Surface*.

Up until that time, climatology was essentially just a qualitative discipline used as a part of the natural and geographical sciences. However, Dr. Budyko's book revolutionized climatology into a more quantitative and physical discipline, sending a shock through the world's weather- and climate-related academic circles. The entire field of global climate research was changed drastically as physical climatological methods based on heat balance principles were widely adopted. As a pioneer and major advocate of physical climatology, Dr. Budyko made extremely significant achievements in the field.

In addition, under the direction of Dr. Budyko, an atlas of all components of the heat balance of the Earth was completed in 1963. This atlas, which shows the energy balance of the Earth as viewed from space, served as the bible of global climate research. In more recent years, the atlas has been important to efforts to research and solve global environmental problems.

Dr. Budyko has studied not only the abiotical processes that shape our climate but also the role of biological organisms and human activities. His efforts to analyze the interrelationships between climate and the Earth's inhabitants are a distinguishing feature of his work.

While investigating the effects of human activities involving land surface and energy use, Dr. Budyko also quantitatively analyzed the composition of the atmosphere in the geological past and confirmed that a major factor in earlier incidents of global warming was change in the concentration of carbon dioxide. In 1972, many scientists were actually predicting that the global climate was about to enter a cool-down phase. However, Dr. Budyko issued a report warning that, based on his quantitative analysis, the consumption of fossil fuels was raising the concentration of carbon dioxide in the atmosphere and pushing up average temperatures. In addition, Dr. Budyko continued his research on the interrelatedness of the climate and living organisms, publishing *Climate and Life* in 1971. In this book, he showed how major past climate changes and the extinction of animal species were related, contributing to our understanding of the environmental problems that we face today.

Major past changes in the climate were largely the result of volcanic activity or collisions with meteorites that generated large amounts of minute aerosol particles. These particles rose to the stratosphere, where they reduced the projection amount of sunlight. This in turn lowered the temperature of the Earth's surface. Dr. Budyko postulated that if a nuclear war were to occur and release large amounts of aerosol particles, the resulting climate change would be on such a scale as to threaten the extinction of humankind. His warnings of such a "nuclear winter" were made in the beginning of the 1980s and are believed to have helped bring about the signing of a treaty by the United States and the former Soviet Union to reduce mid-range nuclear missiles.

Dr. Budyko is the father of physical climatology and greatly raised the level of precision in global climate research. Not only did he pave the way for the application of physical methods of climate prediction but he also delved into the interrelatedness of the climate and living beings, including humankind. Dr. Budyko's achievements represent a major contribution to the search for solutions to global environmental problems.

Education and Academic and Professional Activities

1942	Master of Sciences (Leningrad Polytechnic Institute, Division of Physics)
1942	Researcher, the Main Geophysical Observatory, Leningrad
1951	Doctor of Science, the Main Geophysical Observatory
1951–1954	Deputy Director of the Main Geophysical Observatory
1954–1972	Director of the Main Geophysical Observatory
1964	Corresponding Member of the Academy of Sciences of the U.S.S.R.
1972–1975	Head of the Division for Physical Climatology, the Main Geophysical Observatory
1975–	Head of the Division for Climate Change Research, the State Hydrological Institute, St. Petersburg
1992	Academician of the Russian Academy of Sciences

Major Awards Received

1958	Lenin National Prize
1972	Prof. Lithke Gold Medal of the Russian Geographical Society
1987	Gold Medal of the World Meteorological Organization
1989	A.P. Vinogradov Prize of the Academy of Sciences
1991	Diploma of the First Degree of the Russian Knowledge Society
1994	Prof. R. Horton Medal of the American Geographical Union
1995	A.A. Grigoryev Prize of the Russian Academy of Sciences

Mr. David R. Brower

(Born on July 1, 1912, in Berkeley, California, U.S.A.)
Chairman of the Earth Island Institute

In December 1997, the Third Conference of Parties to the United Nations Framework Convention on Climate Change (COP3) was held in Kyoto. Nearly 4,000 people from international environmental nonprofit organizations (NPOs) gathered from around the world to determine policies aimed at stopping global warming. Mr. Brower has spent his lifetime shaping original ideas and methods for promoting environmental conservation, such as those seen in the activities of these NPOs.

In the United States in the 1930s, when awareness of environmental issues had yet to become widespread, Mr. Brower spoke of the Earth as an "oasis" in space and as a "sanctuary." He resolved to help preserve the environment in its natural state for future generations. Believing that "land is not inherited from one's parents, but rather borrowed from one's children," Mr. Brower devised a three-fold method of guarding nature and biological diversity—which, once lost, can never be restored. His method is known as CPR. "C" is for the rational use of natural resources through Conservation; "P" is for the Preservation of threatened, endangered, and undiscovered species; and "R" is for the Restoration of what humankind has damaged. Based on CPR, Mr. Brower has developed original environmental education methods and a code of ethics.

Mr. Brower has conducted a wide range of research into environmental problems using social scientific methods. By focusing precisely on the issues involved and broadening public awareness, he has been able to wage extremely effective environmental conservation campaigns. A prime example is Mr. Brower's activities related to proposed dam sites. Asserting the importance of preserving biological diversity, he conducted scientific studies into the environmental significance of such sites. He researched such factors as the likely effects of water evaporation to be generated by the dam and compared the merits and demerits of hydropower as opposed to thermal power. Mr. Brower has written many books and produced films, using the media to publicize the different facets of environmental issues and appeal to the public. He has also lobbied in Congress for his causes. Through these types of independent environmental education campaigns, Mr. Brower helped halt proposed dam construction in Dinosaur National Monument, the Grand Canyon, and other sites. Mr. Brower also contributed to the establishment of national parks and seashores in Kings Canyon, the North Cascades, the Redwoods, Cape Cod, Point Reyes, and other areas, and has had a large influence on national land use and other policy formation.

Mr. Brower's environmental conservation activities also extend to the Earth as a whole planet, a complete biosphere. He fostered the concept of choosing places throughout the world important in terms of biological diversity, ecosystems, or geology, and designating them international legacies. This concept was realized in the establishment of UNESCO's system of World Heritage sites. Mr. Brower's efforts to preserve the environment and ecology of Mount Everest and its surrounding area, the Galapagos Islands, and Lake Baikal are another important part of his work.

Between 1952 and 1969, Mr. Brower served as the first executive director of the Sierra Club, working to preserve and protect the natural environment. In 1969, he established Friends of the Earth, and in 1982 he founded the Earth Island Institute. These organizations are helping to protect nature, save species threatened by extinction, and fight pollution by linking environmental issues with global social and political issues. By showing how the environment is involved with nuclear threats, overpopulation, Third World poverty, and war, they play a vital role in the international environmental movement.

Many universities, including the University of Maryland, have recognized Mr. Brower's accomplishments and conferred honorary degrees. His academic activities include a guest professorship at Stanford University.

Mr. Brower has brought tremendous foresight and vision to the cause of conserving the natural environment. His development of the methods that many environmental NPOs now use to carry out their activities have earned him high regard not only in his country but throughout the world.

Education and Academic and Professional Activities

1929–1931	Attended the University of California
1933	Joined the Sierra Club
1935–1938	Worked in Yosemite National Park, and as publicity manager for two of these years
1941–1952	Editor at University of California Press
1952–1969	First executive director of the Sierra Club
1969	Established Friends of the Earth
1982	Founded Earth Island Institute
1990–1992	Led delegation to Lake Baikal in Siberia to aid protection and restoration efforts

Major Awards Received

1956	National Parks Association Award
1967	Paul Bartsch Award, Audubon Naturalist Society
1970	Brooklyn College Library Association Award
1979	Golden Ark Award, Prince of the Netherlands
1986	Rose Award, World Environment Festival in Ottawa
1987	Strong Oak Award, New Renaissance Center
1994	Robert Marshall Award, Wilderness Society

Honorary Degrees

1967	Hobart and William Smith Colleges
1973	University of San Francisco
1973	University of Maryland
1977	The Colorado College
1984	New School for Social Research
1985	Sierra Nevada College
1995	Lincoln Law School

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