Blue
Planet
Prize

FOR IMMEDIATE RELEASE
June 11, 2003

2003 BLUE PLANET PRIZE: ANNOUNCEMENT OF PRIZE WINNERS

Dr. Gene E. Likens and Dr. F. Herbert Bormann (U.S.A.)
For their roles in developing a comprehensive understanding of the human impact on ecosystems through long-term measurement of flows of water and chemical substances in watersheds.

Dr. Vo Quy (Vietnam)
For his key role in conserving and restoring Vietnam's war-damaged environment and initiating community-based conservation projects.

This year marks the 12th awarding of the Blue Planet Prize, the international environmental award sponsored by the Asahi Glass Foundation, chaired by Hiromichi Seya. Two Blue Planet Prizes are awarded to individuals or organizations each year that make outstanding achievements in scientific research and its application, and in so doing help to solve global environmental problems. The Board of Directors and Councillors selected the following recipients for this year.

1) **Dr. Gene E. Likens, U.S.A.**
President and Director, Institute of Ecosystem Studies
Dr. F. Herbert Bormann, U.S.A.
Oastler Professor, Emeritus, School of Forestry & Environmental Studies, Yale University

The Hubbard Brook Ecosystem Study, now in its 40th year, has become a model for the study of whole, intact or experimentally manipulated ecosystems throughout the world. Based on principles developed and applied by F. H. Bormann and G. E. Likens, the model allows comprehensive study of the structure, function and temporal development of whole ecosystems and their connection with the larger biogeochemical cycles of the Earth. It also allows evaluation of human effects on ecosystem functions and thus contributes to the development of policies designed to remedy negative effects. For example, the Study, with Professor Likens as the senior scientist, revealed the relationship between fossil fuel use in North America and acid rain and contributed critical data to the U.S. Congress for the 1990 Clean Air Act Amendments.

2) **Dr. Vo Quy, Vietnam**
Professor, Center for Natural Resources Management and Environmental Studies, Vietnam National University, Hanoi

Dr. Quy investigated the effects of war on the environment and later served as a key member of the working group for Research on the Long-Term Effect of Herbicides Used in the War on the Environment and on Living Resources. In 1985, he founded the Center for Natural Resources Management and Environmental Studies, Vietnam's first environmental research and training institute. He played a key role in initiating new environmental policies for sustainable development that will contribute to the economic growth of Vietnam. In addition, he educated local citizens about the importance of the forests, and they achieved remarkable results using community-based conservation strategies under his guidance. Dr. Quy, an ornithologist, has also made wide-ranging contributions to the conservation of biodiversity, helping to protect migratory birds and other creatures.

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Since one of the prizes bestowed this year has two co-winners, there are three recipients.
Each prize consists of a certificate of merit, a commemorative trophy and a supplementary award of 50 million yen (shared in the case of co-winners).

The awards ceremony will be held on October 22, 2003 (Wednesday), at the Akasaka Prince Hotel (Chiyoda Ward, Tokyo). The commemorative lectures by the prize recipients will be held at the United Nations University (Shibuya Ward, Tokyo) the next day, on October 23 (Thursday).

* This press release may also be viewed on the Internet from June 16, 2003 at www.af-info.or.jp.

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Attachment

Remarks from the Award Recipients upon Notification of their Selection

Dr. Gene E. Likens and Dr. F. Herbert Bormann

"We are deeply pleased and honored to accept the Blue Planet Prize. During this period of accelerated degradation and fragmentation of the Earth's natural resources, we are especially pleased that our four decades of research, called the Hubbard Brook Ecosystem Study, are being recognized to exemplify the goals of the Blue Planet Prize—that is, 'we sincerely hope that people everywhere will work toward protecting our planet from a human-made demise, ensuring that the natural environment continues to exist for tomorrow's generations.'

During the last 40 years, we developed and honed the small watershed approach for the quantitative study of forest and associated aquatic ecosystems, and in the process, produced the longest sustained comprehensive records of precipitation and streamwater chemistry in the world. These studies led to the discovery of acid rain in North America, quantified the linkages among air-land-water systems, and produced a deeper understanding of the dynamics of forest ecosystems that contributed to the development of sustainable forestry.

We are extremely grateful to the Asahi Glass Foundation for recognizing our work with the Blue Planet Prize."

Dr. Vo Quy

"I am deeply moved to be awarded the 2003 Blue Planet Prize. It is not only a great honor for me, but also for my country, Vietnamese scientists and environmentalists. I would like to share this Prize with my colleagues, friends and students, who for years, continuously supported, helped and encouraged me in my work.

Vietnam is facing the critical problems of the degradation of its natural resources and the decline of its environment. The Vietnamese people have made efforts to recover from the wounds of the devastating war. They are trying to develop the economy while at the same time conserving resources and protecting nature by developing an environmentally sound strategy of sustainable development. This entails the rational use of natural resources and the involvement of the majority of the country's inhabitants in the process with a new approach directed at how to satisfy peoples' needs without damaging the ecological balance. I am pleased that I have devoted more than thirty years of my life to this great movement in my country.

The Blue Planet Prize encourages me and gives me a great opportunity to continue my conservation efforts with a hope that humans can live in peace and harmony with nature in the future. "

Profiles of the 2003 Blue Planet Prize Recipients

Dr. Gene E. Likens and Dr. F. Herbert Bormann

The 40-year Hubbard Brook Ecosystem Study arose from an idea conceived by Dr. Bormann. As a botany professor at Dartmouth College in 1960, he proposed to Dr. Robert S. Pierce (deceased), Project Leader of the U. S. Forest Service hydrologic station at the Hubbard Brook Experimental Forest (HBEF), that water moving down the slopes of HBEF's small watersheds would deposit much of their nutrient load in small streams draining the watersheds. Since the water leaving the small watersheds at HBEF was measured, it would be possible to estimate nutrient outputs for entire forested watershed-ecosystems by measuring streamwater nutrient concentrations. Nutrient inputs could be estimated by multiplying nutrient concentrations in rain and snow by quantities of water entering the watershed-ecosystem. Nutrient input-output data would make it possible to construct nutrient budgets for forested watershed-ecosystems at HBEF and to determine whether they were gaining or losing nutrients. This simple but powerful model allowed the use of small watersheds to quantify the connection between forest ecosystems and the larger biogeochemical cycles of the Earth.

Gene E. Likens (a young scientist, Ph.D. received in 1962) joined the faculty in the Department of Biological Sciences at Dartmouth College in the fall of 1961. Dr. Likens specialized in experimental limnology (the study of lakes and streams). Thus, in 1961, in a wonderful set of serendipitous circumstances, Bormann, a forest ecologist, and Likens, an aquatic ecologist, joined forces and began a 42-year collaborative relationship.

In one of their first collaborative efforts, they developed a nutrient flux and cycling model, which when combined with the small watershed technique, allowed measurement of nutrient parameters for watersheds at HBEF. In 1962, Bormann and Likens wrote a grant proposal to the U. S. National Science Foundation based on their nutrient flux and cycling model. Dr. Likens invited Dr. Noye M. Johnson (deceased), a geologist, to join in their proposal. In 1963, the National Science Foundation funded their proposal. Thus, the Hubbard Brook Ecosystem Study was initiated.

In the 1960s, Drs. Bormann, Likens, Pierce and Johnson formed the core of the small group that initiated ecosystem and biogeochemical studies in the HBEF in the White Mountain National Forest in New Hampshire, U.S.A. The Hubbard Brook Ecosystem Study continues to be productive and vibrant to this day. As of 2003, more than 60 principal researchers have participated along with scores of Ph.D. students, many Masters students and undergraduate associates.

Some of the major contributions of the Hubbard Brook Ecosystem Study to science and to the management of natural resources are as follows.

1. Research from the Hubbard Brook Ecosystem Study offered to the scientific community a new way to evaluate nutrient cycling in whole, intact or manipulated, terrestrial ecosystems. Similar studies based on their nutrient flux and cycling model and the small watershed technique have been initiated throughout the World.
2. Based on observation, experimentation and the Jabowa computer model, they developed a biomass accumulation curve for the northern hardwood forest, which in contrast to other

models, demonstrated substantial biomass loss during the first decade of forest regrowth after clear cutting. This finding has great implications for estimates of the rates at which forests can remove carbon dioxide from the atmosphere.

3. The HBES has demonstrated that the small watershed technique can be used to evaluate the effects on ecosystems of such factors as air pollution, timber harvesting, ice storms and climate change. Such findings can be used to develop management techniques to lessen undesirable environmental effects.
4. One experiment revealed that deforestation not only resulted in a large increase in stream flow, but also in loss of nitrate at rates 40 to 50 times higher than preharvest levels. Long-term study indicated that nearly ten years were required for streams to return to preharvest levels. This type of harvest resulted not only in polluted stream water, but also in substantial losses of nutrients that might slow down subsequent growth of the recovering forest. These findings resulted in a substantial national debate on forest harvesting methods.
5. Discovery of acid rain in North America. The continuous analyses of precipitation since 1963 demonstrated the link between the use of fossil fuels in North America and increased acidification of rain and snow. This discovery prompted the world's first international symposium on acid rain and was instrumental in gaining recognition that acid rain is an international phenomenon. These data subsequently contributed to the 1990 Clean Air Act Amendments in the United States. Moreover, it made it clear that acid rain does not just affect plants and surface waters directly, it leaches calcium from the forest soil. This leaching deprives the soil of nourishment and buffering capacity and causes major damage to forest and aquatic ecosystems. Recent research, after the law was amended, has warned that although the emissions of sulfur dioxide to the atmosphere have been significantly reduced, there has been relatively little improvement in the acidity of precipitation and recipient ecosystems, and additional controls on sulfur and nitrogen oxides may be required.

As these achievements demonstrate, the Hubbard Brook Ecosystem Study is a multidisciplinary effort combining the talents of many people from many disciplines in a fruitful way. The team assembled by Drs. Bormann and Likens in the 1960s to comprise the Hubbard Brook Ecosystem Study was not only innovative and productive in combining the talents from many disciplines, but was trend setting in the collection and use of long-term, high-quality ecological data for defining and evaluating environmental problems.

Dr. Bormann retired from Yale University in 1992 and reduced his role in the HBES.

Dr. Likens continues to have an enormous presence in the study, focusing on the impact of acid rain on the ecosystems of North America, the ecology of aquatic ecosystems and the importance of long-term environmental research. In 1988, he was instrumental in the HBES being included in the Long-Term Ecological Research Programs, now numbering around 20, financially supported by the U.S. National Science Foundation.

Drs. Likens and Bormann, directly and indirectly, have fostered the development of many young scientists throughout the world. As of 2003, research at Hubbard Brook has resulted in over 1,200 published articles and six books.

From the beginning of the HBES, Drs. Likens and Bormann have been concerned with a fruitful connection between science and the flow of useful benefits to citizens, and have tried to

make the connection between science and policy clear to the public by a variety of means, including seminars, congressional testimony, articles, television appearances, and newspaper and magazine interviews. To achieve these ends, they joined with others to form the Hubbard Brook Research Foundation, which serves to connect science and policy.

Biography — Dr. F. Herbert Bormann

1922	Born March 24 in New York City, New York, U.S.A.
1941	Enters the University of Idaho, Moscow, Idaho
1942	Enlists in the U. S. Navy, becomes Shipfitter 2nd Class
1944	Selected for officer training at Princeton University
1945	Mustered out of navy
1946	Enters Rutgers University and graduates in 1948
1948	Enters Duke University and earns Ph.D. in 1952
1952	Assistant Professor, Emory University
1956	Assistant Professor, Dartmouth College
1962	Professor of Botany, Dartmouth College
1966—92	Oastler Professor of Ecosystem Ecology, Yale University
1992—present	Professor Emeritus and Senior Research Associate, Yale University
1993	Adjunct Professor, Department of Botany, University of California, Santa Barbara
1994	Adjunct Professor, School of Natural Resources, University of Vermont
1970—71	President, Ecological Society of America
1972	Elected to the American Academy of Arts and Sciences
1973	Elected to the U. S. National Academy of Sciences

Select Awards — Dr. Bormann

1992	International St. Francis Prize for the Environment
1993	Tyler Prize—World Prize for Environmental Achievement (with G.E. Likens)

Biography — Dr. Gene E. Likens

1935	Born January 6 in Pierceton, Indiana, U.S.A.
1957	Graduates from Manchester College
1962	Earns Ph.D. in Zoology, University of Wisconsin-Madison
1963	Instructor, Department of Biological Sciences, Dartmouth College, and promoted to Assistant Professor
1966	Associate Professor, Dartmouth College
1969	Associate Professor, Section of Ecology and Systematics, Cornell University
1972—83	Professor, Section of Ecology and Systematics, Cornell University (Charles A. Alexander Professor of Biological Sciences, 1983)
1983—93	Vice President, New York Botanical Garden
1983—present	President and Director, Institute of Ecosystem Studies (G. Evelyn Hutchinson Chair in Ecology, 2000—present)

1983—present	Adjunct Professor, Department of Ecology and Evolutionary Biology, Cornell University
1984—present	Professor of Biology, Yale University
1985—present	Professor, Graduate Field of Ecology, Rutgers University
2003	Adjunct Professor, State University of New York, Albany
1979	Elected to the American Academy of Arts and Sciences
1981	Elected to the National Academy of Sciences

President: Ecological Society of America (1981-1982), American Society of Limnology and Oceanography (1976-1977), American Institute of Biological Sciences (2002), International Association for Theoretical and Applied Limnology (2001-2004)

Select Awards — Dr. Likens

1993	Tyler Prize—World Prize for Environmental Achievement (with F. H. Bormann)
1994	Australia Prize for Science and Technology
2001	National Medal of Science

Dr. Vo Quy

Dr. Quy, or "Uncle Quy " and "the Professor with a smile" as he is affectionately known, was born in a small village in Ha Tinh Province in central Vietnam. He developed a deep interest in birds from childhood and by age 12 could identify most of the species that lived near his village. During the war against French colonial rule, he walked to China and studied biology at the Vietnam teacher-training institute established by the government in China's Guangxi Province. In 1954, he returned to Vietnam and in 1956 helped found the University of Hanoi (since 1993, Vietnam National University, Hanoi), and began teaching in its zoology department. In the early 1960s, he studied at Moscow University and obtained his Ph.D. in ornithology. He subsequently returned to the University of Hanoi as a lecturer and then zoology professor. He remains a professor at that university to this day.

In 1971 and in 1974, during the war with the United States, Dr. Quy and other scientists ventured into many zones in South Vietnam and investigated the effects of the war on the environment. They witnessed wide areas of forest dead from herbicides. Over 20,000 square kilometers of tropical forest and agricultural land were destroyed by the herbicides sprayed there. Dr. Quy, who deeply felt the importance of refoliating the land, served from 1971 to 1985 as the leader of the working group for the Research on the Long-Term Effect of Herbicides Used in the War on the Environment and on Living Resources in South Vietnam. From 1985 to 1990, he served as the vice-chair of the Research Committee on the effect of the herbicides in the war. Dr. Quy provided scientific support for the government's claims regarding the herbicide issue and was one of the arrangers of a herbicide conference with the United States in 2002. Since the political issues were handled on a scientific basis, he has earned the confidence of his American counterparts.

In 1985, he founded Vietnam's first environmental research and training institute, the Center for Natural Resources Management and Environmental Studies (CRES), at the University of Hanoi. It was here that he devised a master plan with his colleagues for rehabilitating 50% of the country's

forests. This plan was adopted by the government as the National Conservation Strategy. In 1989, he authored the first draft of the Law on Environmental Protection for Vietnam as the leader of a team of scientists and contributed in various ways to national policies for environmental protection.

His environmental conservation activities at first were based on a "top-down" approach and involved such actions as proposing tree planting and fruit cultivation as a development program in the buffer zone of Cuc Phuong National Park. However, these results were not as effective as he expected. The main reason was that the inhabitants were not behind the plan.

Thus, in the Ky Thuong area just on the periphery of the Ho Ke Go Nature Reserve in Ha Tinh Province, he educated the inhabitants about the important role of the forest and introduced new technologies in rice planting and agroforestry to upgrade the standard of living. The villagers were the main implementers of the plan to cultivate trees, to organize home gardens by planting fruit trees selected in the area, to improve beekeeping methods and to set up mini-hydroelectric power plants, using fuel saved from wood stoves. The plan was carried out without the intervention of its original planners, and three years later the project produced remarkable results. This attracted attention as Vietnam's first successful example of community-based planning and development, and its methods were applied in other areas of the country. The young CRES scientists have been cooperating with the villagers to implement conservation projects and environmental policies. For example, they have advocated and provided guidance for the management of protected areas and conservation of nature in Vietnam.

In the wildlife conservation field, Dr. Quy spotted an extremely rare eastern sarus crane, a species believed to be decimated by the war, and endeavored to establish a treaty for the protection of migratory birds in the Indochina peninsula. By 1988, more than 1,000 cranes were observed returning to the reserve that was established. Dr. Quy has also worked as a member of the World Conservation Union (IUCN) since 1986, helping to protect endangered species.

Dr. Quy has authored 14 books and more than 100 papers. Of particular note, in 1975 and 1981, respectively, he published a two-volume book entitled "The Birds of Vietnam," the first zoological publication written by a Vietnamese person. The book describes 774 species of birds found in Vietnam (1,004 subspecies), including a new species of pheasant discovered by Dr. Quy.

Dr. Quy, who took the initiative to involve rural communities as the main proponents of the country's nature conservation and reforestation program, is rightly called the father of Vietnam's environmental conservation movement. His efforts and successes in conserving and restoring the damaged natural environment in Vietnam make him an excellent role model for other developing nations with similar environmental conditions.

Biography

1929	Born December 31 in Ha Tinh Province, central Vietnam
1954	Graduates from the Vietnam Pedagogic School
1956	Lecturer in Zoology, Faculty of Biology, University of Hanoi
1964	Enters Moscow University
1966	Earns Ph.D. in Ornithology, Moscow University
1967	Head, Department of Zoology, Faculty of Biology, University of Hanoi
1975-80	Head, Department of Education, University of Hanoi

1980-90	Dean, Faculty of Biology, University of Hanoi
1985-95	Founder and Director, Center for Natural Resources Management and Environmental Studies (CRES), Vietnam National University, Hanoi (VNU)
1989-2000	Dean, Graduate School of Environmental Studies, CRES, VNU
Present	President of Scientific Committee, CRES, VNU

Major Awards Received

1988	WWF Gold Medal, Hong Kong, Peoples Republic of China
1992	UNEP Global 500, Rio de Janeiro, Brazil
1994	IUCN John Philips Memorial Medal, Buenos Aires, Argentina
1994	Bruno H. Schubert Foundation Environmental Prize (Category I), Frankfurt, Germany
1995	PEW Scholars Award, University of Michigan, U.S.A.
1997	Royal Netherlands Order of the Golden Ark, the Netherlands

Report on the Selection Process (12th Annual Prize, 2003)

A total of 1,100 nominators from Japan and 1,400 nominators from other countries recommended 138 candidates. The fields represented by the candidates, in order of numbers, were ecology (36), atmospheric and earth sciences (32), environmental economics and policy making (20), and restoration of environmental destruction (13).

The candidates were drawn from 34 countries, with those from developing countries numbering 35 persons, or 25% of the total.

These candidates were individually evaluated by each Selection Committee member, then the committee was convened to narrow down the field. These results were examined by the Presentation Committee, which forwarded its recommendations to the Board of Directors and Councillors. The Board formally resolved to award one Prize to co-winners **Dr. Gene E. Likens and Dr. F. Herbert Bormann**, and the other to **Dr. Vo Quy**.

The contents of this press release may also be viewed at the Asahi Glass Foundation's Internet web site. Please visit us on-line at:

http://www.af-info.or.jp