Blue Planet Prize

FOR IMMEDIATE RELEASE
June 10, 2026

BLUE PLANET PRIZE 2026:
ANNOUNCEMENT OF PRIZE LAUREATES

This year marks the 35th awarding of the Blue Planet Prize, the international environmental award sponsored by the Asahi Glass Foundation, chaired by Takuya Shimamura. Every year, the Foundation selects two laureates, individuals, or organizations who have made significant contributions towards the resolution of global environmental problems. The Board of Directors has selected the following 2026 Blue Planet Prize laureates.

1. **Dr. Linda S. Birnbaum (USA)** born December 21, 1946

Former Director of the National Institute of Environmental Health Sciences (NIEHS)
Former Director of the National Toxicology Program (NTP)

Dr. Linda S. Birnbaum led pioneering research on the toxicity of persistent organic pollutants (POPs), significantly advancing international risk assessment. By demonstrating how exposure to endocrine disruptors during "critical windows of susceptibility"—such as fetal development—can shape long-term health, she strengthened the scientific basis for protecting vulnerable populations. As Director of both the National Institute of Environmental Health Sciences (NIEHS) and the National Toxicology Program (NTP), she bridged science and policy, translating research into tangible public health improvements.

2. **Professor Edward Barbier (USA)** born July 22, 1957

University Distinguished Professor, Department of Economics, Colorado State University

Professor Edward Barbier has led efforts to value natural capital and ecosystem services, providing concrete guidance for policy and investment. In his UNEP-commissioned report A Global Green New Deal (2009), he presented a recovery strategy integrating economic revitalization, poverty reduction, decarbonization, and ecosystem protection, and has since redefined nature conservation as a "strategic investment" for economic prosperity. Through his analysis of poverty-environment linkages, he has further outlined how to reconcile global environmental concerns with social equity.

- Each laureate is presented with a certificate of merit, a commemorative trophy, and a supplementary award of US$500,000.
- The Award Ceremony is scheduled on Wednesday, October 28, 2026, at Tokyo Kaikan. Commemorative lectures will be given on October 29 and 31, 2026, at the Tokyo Shoken Kaikan and at the Kyoto International Community House, respectively.
- This press release and the photo of each laureate will be published at 11 a.m. on Wednesday, June 10 (JST) on the website of the Asahi Glass Foundation (www.af-info.or.jp/en).

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Statements from the Award Laureates upon Notification of Selection

Dr. Linda S. Birnbaum

I am extremely honored and grateful to have been chosen for the Blue Planet Prize by the Asahi Glass Foundation. I want to thank my many colleagues, students, mentors, and mentees for their collaboration in advancing environmental health science.

My work has focused on understanding the toxicity of persistent organic pollutants (POPs) and how environmental exposure to endocrine-disrupting chemicals leads to lasting developmental and health impacts across the lifespan. This research has strengthened the scientific foundation for protecting vulnerable populations and advancing international risk assessment.

As director of the US National Institute of Environmental Health Sciences, I sought to bridge science and policy by translating this research into meaningful public health protections.

I am especially grateful for the partnership with Japanese scientists and institutions whose early recognition of the potential health impacts of POPs on the environment has advanced our shared mission. The Blue Planet Prize ensures a better world by promoting global partnership and highlighting and supporting the study of the environment.

Professor Edward Barbier

It is an honor and privilege to receive the Blue Planet Prize, which has been awarded by the Asahi Glass Foundation since 1992. The prize “goes to the outstanding individuals or organizations whose work have and continue to contribute significantly to the improvement of the global environment”, and I am humbled to be included as a deserving recipient of this recognition.

My own contribution is based on a simple proposition: Nature is fundamental to our economic wealth and well-being. Explaining why this matters for economic prosperity and sustainability, and what to do about it, has been my life’s work as an economist.

I am profoundly grateful to the Asahi Glass Foundation for recognizing the relevance of my ideas to solving today’s global environmental challenges. I also thank my family and friends for their love and support, and many colleagues and teachers for their encouragement and help along this path.

Report on the Selection Process (Blue Planet Prize 2026)

Nomination forms were sent to 332 nominators in Japan and 878 overseas. By the deadline, we had received a total of 118 nominations. The top three fields represented by the candidates, in order of number, were: ecology (27); atmospheric and earth sciences (25); and environmental economics and policymaking (16). The candidates represented 30 countries.

After each Selection Committee member individually evaluated the 118 candidates, the committee convened to narrow down the field. The Presentation Committee then reviewed the results of their deliberations. Finally, the Board of Directors formally decided to award the Prize to Dr. Linda S. Birnbaum and Professor Edward Barbier.

Laureates (1992-2025)

1992	Syukuro Manabe (USA) International Institute for Environment and Development (UK)
1993	Charles D. Keeling (USA) IUCN—The World Conservation Union (headquartered in Switzerland)
1994	Eugen Seibold (Germany) Lester R. Brown (USA)
1995	Bert Bolin (Sweden) Maurice F. Strong (Canada)
1996	Wallace S. Broecker (USA) The M.S. Swaminathan Research Foundation (India)
1997	James E. Lovelock (UK) Conservation International (head-quartered in the USA)
1998	Mikhail I. Budyko (Russia) David R. Brower (USA)
1999	Paul R. Ehrlich (USA) Qu Geping (China)
2000	Theo Colborn (USA) Karl-Henrik Robèrt (Sweden)
2001	Robert May (Australia) Norman Myers (UK)
2002	Harold A. Mooney (USA) J. Gustave Speth (USA)
2003	Gene E. Likens (USA) and F. Herbert Bormann (USA) Vo Quy (Vietnam)
2004	Susan Solomon (USA) Gro Harlem Brundtland (Norway)
2005	Nicholas Shackleton (UK) Gordon Hisashi Sato (USA)
2006	Akira Miyawaki (Japan) Emil Salim (Indonesia)
2007	Joseph L. Sax (USA) Amory B. Lovins (USA)
2008	Claude Lorius (France) José Goldemberg (Brazil)
2009	Hirofumi Uzawa (Japan) Nicholas Stern (UK)
2010	James Hansen (USA) Robert Watson (UK)
2011	Jane Lubchenco (USA) Barefoot College (India)
2012	William E. Rees (Canada) and Mathis Wackernagel (Switzerland) Thomas E. Lovejoy (USA)
2013	Taroh Matsuno (Japan) Daniel Sperling (USA)
2014	Herman Daly (USA) Daniel H. Janzen (USA) and Instituto Nacional de Biodiversidad (INBio)
2015	Partha Dasgupta (UK) Jeffrey D. Sachs (USA)
2016	Pavan Sukhdev (India) Markus Borner (Switzerland)
2017	Hans J. Schellnhuber (Germany) Gretchen C. Daily (USA)
2018	Brian Walker (Australia) Malin Falkenmark (Sweden)
2019	Eric Lambin (Belgium) Jared Diamond (USA)
2020	David Tilman (USA) Simon Stuart (UK)
2021	Veerabhadran Ramanathan (USA) Mohan Munasinghe (Sri Lanka)
2022	Jigme Singye Wangchuck, the Fourth King of Bhutan Stephen Carpenter (USA)
2023	Richard Thompson (UK), Tamara Galloway (UK), and Penelope Lindeque (UK) Debarati Guha-Sapir (Belgium)
2024	Robert Costanza (USA & Australia) Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (Germany)
2025	Robert B. Jackson (USA) Jeremy Leggett (UK)

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Supplementary Information
Profiles of the 2026 Blue Planet Prize Laureates

Dr. Linda S. Birnbaum

Major research achievements and activities

Dr. Linda S. Birnbaum has consistently spearheaded research connecting the toxicokinetic behavior of environmentally persistent chemicals—such as dioxins, polychlorinated biphenyls (PCBs), polybrominated diphenyl ethers (PBDEs: a type of brominated flame retardants), BPA,[1] and certain PFAS[2]—to their harmful biological effects. By linking ADME processes (absorption, distribution, metabolism, and excretion) to their mechanisms of toxicity in the body, her work has helped bridge the gap between real-world environmental exposure and adverse health outcomes. With over 700 peer-reviewed publications and reports, her scientific contributions have been profound. Notably, she played a pivotal role in establishing the international framework for Toxic Equivalency Factors (TEFs)[3] used to assess the combined toxicity of dioxin-like compounds. She was further instrumental in shifting risk assessment toward "body burden[4]"—prioritizing the actual amount of a chemical absorbed and retained in the body over environmental concentrations alone.

Dr. Birnbaum has also been a leading voice in developmental toxicology[5] and endocrine disruption[6], emphasizing that the health risks of chemical exposure are determined not only by dose but critically by the timing of exposure. She advanced the perspective that exposures during "critical windows of susceptibility"—such as the fetal period, infancy, and adolescence—can produce long-term alterations in biological systems, potentially contributing to chronic conditions such as cancer and metabolic diseases later in life. Her work further demonstrated that, even at very low doses, chemicals can alter gene expression[7], with effects potentially spanning multiple generations. Together, these insights have helped reorient risk assessment and regulatory policy toward the protection of vulnerable populations, including pregnant women and children.

From 1989 for nearly two decades, Dr. Birnbaum served as Director of the Experimental Toxicology Division at the National Health and Environmental Effects Research Laboratory (NHEERL) within the U.S. Environmental Protection Agency's (EPA) Office of Research and Development. In this role, she went beyond elucidating chemical toxicity to forge a strong link between scientific evidence and policy, translating research findings into evidence-based regulations that protect public health. This commitment to bridging science and policy has come to be recognized as an important model for contemporary environmental health science.

From 2009 to 2019, Dr. Birnbaum served as Director of both the National Institute of Environmental Health Sciences (NIEHS) and the National Toxicology Program (NTP), overseeing a research budget exceeding $740 million. Under her interdisciplinary "One NIEHS" vision, she promoted more than 1,000 research grants and supported training and career development. She established the Office of Health Assessment and Translation (OHAT)—later renamed the Health Assessment and Translation (HAT) group—to refine methodologies for evidence integration and systematic review, enhancing the transparency and reproducibility of hazard assessments. She further championed the transition from observational to predictive science and its translation into real-world practice through the following initiatives, consistently embodying her commitment to connecting scientific knowledge to public safety:

- Tox21 (Toxicology in the 21st Century)[8]: A framework for the rapid and efficient evaluation of vast numbers of chemicals.
- CLARITY-BPA[9]: A large-scale collaborative research program between regulatory agencies and academic institutions on the health effects of BPA.
- Disaster Research Response (DR2)[10]: A program supporting rapid environmental health research during disasters and public health emergencies.

Academic and Career Background

2019-present: Special Volunteer at NIEHS
2009-2019: Director, NIEHS and NTP
1989-2008: Director, Experimental Toxicology Division, National Health and Environmental Effects Research Laboratory, U.S. EPA
1980-1987: Research Microbiologist, National Toxicology Program, NIEHS
1979-1980: Senior Staff Fellow, National Toxicology Program, National Cancer Institute (NCI)
1978-1979: Research Scientist, Masonic Medical Research Laboratory, Utica, NY
1976-1978: Research Fellow, Masonic Medical Research Laboratory, Utica, NY
1974-1975: Assistant Professor of Science at Kirkland (Hamilton) College, Clinton, NY
1972-1974: Damon Runyon Post Doctoral Fellow at University of Massachusetts, USA
1972 Ph.D. in Microbiology (Biochemistry minor), University of Illinois, USA
1969 M.S. in Microbiology, University of Illinois, USA
1967 B.A. in Biology, University of Rochester, USA

Glossary

1. BPA (Bisphenol A)
BPA is widely used to produce polycarbonate plastics and epoxy-resin coatings for the interior of food and beverage cans. Due to concerns about its endocrine-disrupting effects, its use is being restricted and replaced with alternatives, particularly in food-contact applications.

2. PFAS (Per- and Polyfluoroalkyl Substances)
PFAS is a collective term for a large and diverse group of synthetic chemicals—numbering in the thousands, with some estimates exceeding 10,000—and is characterized by structures with strong carbon–fluorine (C–F) bonds. These substances repel water and oil and are highly resistant to heat; therefore, they have been widely used in applications such as nonstick cookware coatings, water-repellent sprays, and firefighting foams. Some PFAS are extremely resistant to degradation, persisting in the environment and living organisms for extended periods, which has earned them the nickname “forever chemicals.”

3. Toxic Equivalency Factor (TEF)
TEF is a coefficient used to express the relative toxicity of chemically related hazardous substances (e.g., dioxins), with the toxicity of a reference compound set to 1. The Toxic Equivalent (TEQ) is calculated by multiplying the concentration of each substance by its TEF and adding the results of all substances in the mixture. This approach is used to assess the overall risk posed by mixtures of related contaminants.

4. Body Burden
Body burden refers to the total amount of a chemical that has been absorbed through ingestion, inhalation, or dermal contact and is present in the body at a given time. Some substances accumulate in tissues, particularly body fat. For chemicals that are not easily excreted, body burden can reflect long-term accumulation and serve as an indicator for assessing chronic health risks.

5. Developmental Toxicology
Developmental toxicology studies the adverse effects of chemicals, drugs, and environmental factors on development—from the fetal period through early childhood. It examines impacts on growth, morphogenesis, neurobehavior, and reproductive function, with a strong focus on how effects vary by exposure timing, dose, and individual susceptibility.

6. Endocrine Disruption
Endocrine disruption occurs when chemicals mimic or inhibit endogenous hormones, interfering with hormone synthesis, secretion, transport, receptor binding, or metabolism. This can adversely affect development, reproduction, metabolism, and immune function. Effects of exposure during fetal development and childhood are considered particularly significant.

7. Gene Expression
Gene expression is the process by which information encoded in DNA is used to produce RNA and proteins. Changes in the level or timing of gene expression can lead to long-term alterations in biological systems, including those governing growth, metabolism, and hormonal regulation.

8. Tox21 (Toxicology in the 21st Century)
Tox21 is a collaborative research program involving multiple U.S. federal agencies. It aims to shift toxicity assessment from traditional animal-based testing to an integrated approach combining cell-based (in vitro) assays, high-throughput screening (HTS) using automated systems, and AI-driven computational toxicology. The program's objective is to rapidly and efficiently evaluate thousands of chemicals—up to approximately 10,000—and prioritize them for further safety assessment.

9. CLARITY-BPA
CLARITY-BPA was a large-scale U.S. collaborative research program. It aimed to comprehensively evaluate the health effects of BPA by integrating standardized toxicity tests conducted at an FDA laboratory with state-of-the-art academic analyses under common BPA exposure conditions.

10. Disaster Research Response (DR2)
DR2 is a framework established and led by NIEHS for rapidly investigating environmental exposures and health effects in affected areas following large-scale disasters. In Japan, efforts to adapt and implement a similar framework are underway, led by organizations including the National Institute for Environmental Studies (NIES).

Supplementary Information
Profiles of the 2026 Blue Planet Prize Laureates

Professor Edward Barbier

Major research and activities

Professor Edward Barbier has developed a systematic economic framework that treats nature and ecosystems as "natural capital,[1]"—assets whose value can be quantified and made visible to inform policy decisions. Since coauthoring *Blueprint for a Green Economy* (1989), he has consistently emphasized the importance of environmental valuation, accounting, and incentive design. He pioneered policy-relevant methodologies to quantify the benefits that forests, wetlands, and other ecosystems provide—such as disaster risk reduction and support of resource harvests—as ecosystem services. In *Capitalizing on Nature* (2011), he further advanced the concept of "ecological capital[2]," centered on treating nature's ecosystems as economic assets, and operationalized a framework for incorporating depletion of these non-reproducible assets into economic decision-making. These contributions form the foundation for international practices that place the value of nature at the core of economic systems, directly linking it to investment decisions, economic incentives and institutional design.

A prime example of how Professor Barbier has translated these insights into international policy recommendations is *A Global Green New Deal*, a report commissioned by the United Nations Environment Programme (UNEP) in the aftermath of the 2008–09 global financial crisis. In this report, he presented a recovery strategy integrating economic revitalization, poverty reduction, decarbonization, and ecosystem protection, which contributed to the mainstreaming of the "green economy[3]" concept in international policy debates. In his award-winning 2022 book, *Economics for a Fragile Planet,* Professor Barbier maintains that, in a world of growing environmental risks and ecological scarcity[4], there is a need to rethink markets, governance and institutions built on five principles: ending the underpricing of nature[5]; fostering collective action; accepting absolute limits; attaining sustainability; and promoting inclusivity. He explains how these principles can help to overcome the global challenges posed by climate change, biodiversity loss, freshwater scarcity and deteriorating oceans and coasts.

Throughout his career, Professor Barbier has made the economic case that decoupling wealth creation from environmental degradation requires business, policy and financial actions aimed at better stewardship of the biosphere. Such actions also require an integrated approach that addresses both ecological scarcity—the loss of irreplaceable natural assets and their services—and inequality, whereby the burdens and damages of environmental degradation fall disproportionately on vulnerable populations. He has elucidated a structural chain in which the undervaluation of natural capital drives resource overexploitation, while the resulting losses directly undermine the livelihoods of disadvantaged communities and thereby exacerbate inequality. He further contends that environmental policy must go beyond the pursuit of economic efficiency to tackle ecological scarcity and social equity, as simultaneous and interconnected challenges. By advocating a shift from growth that is based on the exploitation of nature to prosperity grounded in investment in nature, he underscores the need for reforming markets, governance and institutions to ensure a just and sustainable transition[6].

Professor Barbier has also analyzed the "poverty-environment trap[7]" in developing countries—a vicious cycle in which poor households in remote and fragile environments have few economic opportunities to improve their livelihoods and escape poverty. To break this cycle and achieve environmental conservation and poverty reduction simultaneously, he has advocated comprehensive measures that combine well-defined land and resource-use rights, sound land and water management, targeted investments and incentives, and job creation. He has further proposed how Payments for Ecosystem Services (PES) [8]: can more effectively reach impoverished areas and indigenous communities, demonstrating how environmental protection can serve as a meaningful strategy for poverty alleviation. Through this body of work, Professor Barbier has provided a rigorous scientific foundation for the view that safeguarding natural capital is fundamental to human prosperity, environmental sustainability and a just society.

Academic and Career Background

2025 Visiting Professor, Grantham Research Institute on Climate Change and the Environment, London School of Economics and Political Science
2025 Visiting Fellow, Oxford Martin School, University of Oxford
2019 University Distinguished Professor, Department of Economics, Colorado State University
2017 Senior Scholar, School of Sustainable Futures, Colorado State University
2016-2017: Chair, Department of Economics, University of Wyoming
2000-2017: John S. Bugas Professor of Economics, Department of Economics, University of Wyoming
1995-2000: Reader, Environment Department, University of York, United Kingdom
1990-1993: Director, London Environmental Economics Centre (LEEC), IIED & University College London
1986-1988: Economist, International Institute for Environment and Development, London
1986 Ph.D. Economics, Birkbeck College, University of London, London, England
1980 M.Sc. Economics, London School of Economics and Political Science, London, England
1979 B.A. Economics and Political Science, cum laude, Yale College, Yale University, USA

Glossary

1. Natural Capital
Natural capital is a concept that views an economy's natural resource and environmental endowment as a valuable economic asset, or store of wealth. It comprises conventional marketed natural capital, such as land, freshwater, mineral ores, energy reserves, fisheries and forests, which are valuable sources of marketed inputs bought and sold in economies. However, nature also provides other important nonmarketed benefits, or "services", that support an economy and impact people's livelihoods and well-being. Such services can be wide ranging – from absorbing pollution and waste to the enjoyment of nature from recreation or tourism to protecting and supporting production activities through controlling floods, storms and droughts. These benefits provided by nature are valuable to our economy, regardless of whether there exists a market for them.

2. Ecological Capital
The concept of *ecological capital* views unique and irreplaceable natural ecosystems as a special type of natural capital, because their structure, functioning and resilience produce a very wide range of beneficial ecosystem goods and services – often called *ecosystem services* for short. In addition, ecosystems are frequently depleted or degraded, e.g. through habitat destruction, land conversion, pollution impacts and so forth, and once lost ecological capital is often difficult to restore completely. Professor Barbier has demonstrated that, by quantitatively assessing the value of ecosystem services—including water purification, disaster risk reduction, and climate regulation—and incorporating this value into economic and policy decisions, ecological capital provides a foundation for achieving sustainable development.

3. Green Economy
According to Professor Barbier, a green economy aims to simultaneously achieve prosperity and sustainability through decoupling wealth creation from environmental degradation. In today's world, transitioning to a green economy requires ensuring job creation and poverty reduction by advancing decarbonization and resource efficiency to reduce environmental impacts and ecosystem loss, while ensuring social equity. Professor Barbier positioned investment in natural capital, and especially ecological capital, as a key policy measure contributing to the realization of a green economy.

4. Ecological Scarcity
As defined by Professor Barbier, ecological scarcity refers to the loss of irreplaceable natural assets and their beneficial services relative to ordinary goods and services produced by economies. Because many important natural assets, such as ecosystems, and their services are not bought and sold in markets, they are routinely undervalued in our financial, policy and business decisions. Consequently, rising ecological scarcity is ignored in these decisions – to the detriment to both environmental sustainability and human welfare.

5. Underpricing of Nature
According to Professor Barbier, the underpricing of nature is a fundamental economic failure where many important services of nonmarketed natural capital —such as air purification, water filtration, disaster risk reduction and pollination—are treated as free or undervalued, leading to excessive environmental destruction. Worse still, because the resulting ecological costs are ignored, we often subsidize the economic activities that lead to this destruction – leading to a proliferation of environmentally harmful subsidies in many economies and industries.

6. Just Transition
Just transition refers to ensuring that the burdens of decarbonization and other structural shifts in resource and environmental use in the "greening" of economies do not fall disproportionately on particular workers, regions, or vulnerable groups. Professor Barbier has highlighted the risk that environmental policies may exacerbate inequality and has advocated integrating social measures—such as the protection of resource-use rights and the creation of decent jobs—into climate and environmental strategies. It is regarded as a crucial guiding principle for reconciling sustainability with social equity.

7. Poverty-Environment Trap
The poverty-environment trap, as defined by Professor Barbier, refers to a vicious cycle in which poor households in remote and fragile environments have few economic opportunities to improve their livelihoods and escape poverty. This trap is often exacerbated by institutional failures in resource management, by insecure resource tenure or property rights and lack of investments targeted at breaking this cycle.

8. Payments for Ecosystem Services (PES)
PES refers to financial payments made by the beneficiaries of ecosystem services—such as watershed protection, carbon sequestration, and biodiversity conservation—to the providers of those services (e.g., landowners or local communities), in return for maintaining or enhancing those services. By providing direct financial incentives for conservation activities, PES schemes aim to curb ecosystem degradation while simultaneously improving providers' livelihoods and promoting sustainable resource management.