Blue Planet Prize

FOR IMMEDIATE RELEASE
June 10, 2020

2020 BLUE PLANET PRIZE: ANNOUNCEMENT OF PRIZE WINNERS

This year marks the 29th anniversary 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 winners, individuals or organizations who have made significant contributions to the resolution of global environmental problems. The Board of Directors have selected the following 2020 Blue Planet Prize recipients.

1. Prof. David Tilman (USA), Date of Birth: 22 July, 1949

Regents Professor, University of Minnesota
Distinguished Professor, University of California, Santa Barbara

He has studied health and environmental impacts of agriculture and of dietary choices and demonstrated that while plant-based foods are beneficial to human health and the environment, red meats negatively affect both human health and the environment. Recognizing the tightly-linked diet-environment-health trilemma as a global challenge, he has advocated shifts towards diets and agricultural practices that are better for human health and the global environment.

2. Dr. Simon Stuart (UK), Date of Birth: 14 July, 1956

Director of Strategic Conservation at Synchronicity Earth
Former Chair of the IUCN Species Survival Commission

He led the development of the categories and quantitative criteria for the IUCN Red List of Threatened Species and contributed significantly to the expansion of the number of species assessed. This strong scientific basis has established the Red List as the most reliable, widely used data on species extinction risk. Also, conceiving and leading the Global Amphibian Assessment, he warned that the decline in the number of amphibians indicates that not only their habitats but also the surrounding ecosystems are deteriorating.

- Each recipient is presented with a certificate of merit, a commemorative trophy, and 50 million Japanese yen in prize money.

- We'd like to hold the Blue Planet Prize Award Ceremony and commemorative lectures, which could well be on a smaller scale, while taking proper measures to prevent infection with the new coronavirus. The Award Ceremony is scheduled on Wednesday, October 7, 2020 at Tokyo Kaikan. Commemorative lectures will be given on October 8 and 10, 2020, at United Nations University (Shibuya Ward, Tokyo) and at Kyoto University, respectively.

- This press release and the photo of each recipient will be published on Wednesday June 10 at 11 a.m. on the website of the Asahi Glass Foundation (www.af-info.or.jp).

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Statements from the Award Recipients upon Notification of Selection

Prof. David Tilman (USA)

I am deeply honored by the Blue Planet Prize because of its unique role in emphasizing the crucial importance of global environmental sustainability for the future of humanity. It is doubly an honor because of my great respect for prior recipients of this award. They saw forces that threatened our planet, alerted us, and discovered solutions. I have but followed in their footsteps. My path was made possible by the teachers who challenged and guided me, and by the colleagues and students with whom I have been fortunate to collaborate. I am indebted to them all.

As we approach a population of 11 billion people, our Blue Planet has become a Full Earth. The long-term habitability of our Full Earth, the fates of innumerable species and our health all depend on how we live, and especially on which foods we choose to eat and how we do agriculture. Our lives, and the lives of all who come after us, can be greatly enriched by acknowledging the interdependence of all of Earth's life, and by continually discovering and following paths to ever greater sustainability.

Dr. Simon Stuart (UK)

Receiving the 2020 Blue Planet Prize is the greatest honour of my life. I have been familiar with the work of the Asahi Glass Foundation since 1993 and have the utmost respect for its unwavering commitment to promoting rigorous science to help achieve a sustainable future for our precious planet. I have had the rare privilege to spend my entire working life following my passion to promote the conservation of nature.

I started with my doctoral work on highly threatened bird communities in Tanzania, and ended up working on the science-policy interface of biodiversity conservation. I helped to bring cutting-edge science into key information resources for conservation, especially the IUCN Red List of Threatened Species and Key Biodiversity Areas. But I could have achieved nothing without the ongoing support of my family, mentors, collaborators and friends over many years. We stand at a critical moment in history – will we listen to the evidence and start living within the limits set by nature?

I plan to use the profile gained from winning the Blue Planet Prize to promote a harmonious, sustainable future for people and nature.

Report on the Selection Process (2020 Blue Planet Prize)

A total of 488 nominators from Japan and 795 nominators from other countries recommended a total of 127 candidates. The top three fields represented by the candidates, in order of number, were environmental economics and policy making (33), ecology (25), atmospheric and earth sciences (18). The candidates represented 34 countries; 21 nominations, 17 percent of the total, were from developing countries.

After individual evaluation of the 127 candidates by each Selection Committee member, the committee was convened to narrow down the field. The results of their deliberation were examined by the Presentation Committee. The Board of Directors formally decided to award the Prize to **Prof. Tilman,** and to **Dr. Stuart**.

Laureates (1992-2020)

1992	Dr. Syukuro Manabe (USA) International Institute for Environment and Development (UK)
1993	Dr. Charles D. Keeling (USA) IUCN—The World Conservation Union (headquartered in Switzerland)
1994	Professor Dr. Eugen Seibold (Germany) Mr. Lester R. Brown (USA)
1995	Dr. Bert Bolin (Sweden) Mr. Maurice F. Strong (Canada)
1996	Dr. Wallace S. Broecker (USA) The M.S. Swaminathan Research Foundation (India)
1997	Dr. James E. Lovelock (UK) Conservation International (head-quartered in the USA)
1998	Professor Mikhail I. Budyko (Russia) Mr. David R. Brower (USA)
1999	Dr. Paul R. Ehrlich (USA) Professor Qu Geping (China)
2000	Dr. Theo Colborn (USA) Dr. Karl-Henrik Robèrt (Sweden)
2001	Lord (Robert) May of Oxford (Australia) Dr. Norman Myers (UK)
2002	Dr. Harold A. Mooney (USA) Professor J. Gustave Speth (USA)
2003	Dr. Gene E. Likens (USA) and Dr. F. Herbert Bormann (USA) Dr. Vo Quy (Vietnam)
2004	Dr. Susan Solomon (USA) Dr. Gro Harlem Brundtland (Norway)
2005	Professor Sir Nicholas Shackleton (UK) Dr. Gordon Hisashi Sato (USA)
2006	Dr. Akira Miyawaki (Japan) Dr. Emil Salim (Indonesia)
2007	Professor Joseph L. Sax (USA) Dr. Amory B. Lovins (USA)
2008	Dr. Claude Lorius (France) Professor José Goldemberg (Brazil)
2009	Professor Hirofumi Uzawa (Japan) Lord Nicholas Stern of Brentford (UK)
2010	Dr. James Hansen (USA) Dr. Robert Watson (UK)
2011	Dr. Jane Lubchenco (USA) Barefoot College (India)
2012	Professor William E. Rees (Canada) and Dr. Mathis Wackernagel (Switzerland) Dr. Thomas E. Lovejoy (USA)
2013	Dr. Taroh Matsuno (Japan) Professor Daniel Sperling (USA)
2014	Prof. Herman Daly (USA) Prof. Daniel H. Janzen (USA) and Instituto Nacional de Biodiversidad (INBio)
2015	Professor Sir Partha Dasgupta FBA FRS (UK) Professor Jeffrey D. Sachs (USA)
2016	Mr. Pavan Sukhdev (India) Prof. Markus Borner (Switzerland)
2017	Prof. Hans J. Schellnhuber (Germany) Prof. Gretchen C. Daily (USA)
2018	Prof. Brian Walker (Australia) Prof. Malin Falkenmark (Sweden)
2019	Prof. Eric Lambin (Belgium) Prof. Jared Diamond (USA)
2020	Prof. David Tilman (USA) Dr. Simon Stuart (UK)

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Supplementary Information
Profiles of the 2020 Blue Planet Prize Recipients

Prof. David Tilman (USA)

Major research achievements and activities

Prof. Tilman has shown that greater biodiversity leads to greater ecosystem stability and productivity by analyzing data from theoretical studies using mathematical models as well as from long-term grassland experiments, an approach to environmental science that he began pursuing in the 1970s. His finding that biodiversity is important to the functioning of ecosystems was met with high acclaim around the world[*1].

In light of the need to achieve agricultural production that can meet future food demand and yet hold down the impact on the global environment, he has been making important proposals for the realization of sustainable agriculture from a scientific point of view. For instance, he has shown that it is possible to meet the growing global demand for crops while curbing GHG emissions and reducing nitrogen fertilizers and habitat destruction by applying and improving technologies to increase yields on the existing croplands of under-yielding nations.

As developing countries modernize and shift to high-calorie and high-meat diets, diet-related diseases will become more prevalent, while land clearing to increase food production will result in elevated GHG emissions, habitat destruction and extinctions. This could well affect the achievability of the Sustainable Development Goals (SDGs)[*2] and commitments under the Paris Agreement[*3]. Introducing the environmental perspective as a new viewpoint in considering the food problems of today, Prof. Tilman and his collaborators conducted a quantitative examination[*4] of the impact of diets on the incidences of diet-related diseases, GHG emissions, etc. based on scientific data. Findings from this research demonstrated that diets composed of whole grain cereals, fruits, vegetables, legumes, nuts, olive oil are good for human health and have a minimal impact on the environment, whereas foods with the highest risk of causing illness—particularly red meat such as pork, beef, sheep and goat meat—have the greatest environmental impact. Prof. Tilman considers what he refers to as the "diet-environment-health trilemma[*5]" a global challenge and is advocating a dietary shift away from meat toward plant-based healthy foods, which are produced through sustainable agriculture and have the least impact on the environment, so that humans can continue to thrive in a favorable environment. Three papers, in which he put forward proposals from the standpoint of providing scientific facts to enable society to make appropriate choices, has had a significant global impact, with his papers cited many times in the Intergovernmental Panel on Climate Change (IPCC)[*6] Special Report on Climate Change and Land in 2019[*7].

Prof. Tilman has been making many policy recommendations to the federal government through various forms of engagement, for instance, as an invited "Distinguished Speaker" to the U.S. Department of State and as a member of working groups convened by the President's Committee of Advisors on Science and Technology (PCAST). More recently, he has been serving as an Advisory Committee member for Our Planet, Our Health[*8], a UK-based program that is providing financial support for environmental and health research.

Academic and Career Background

1971	B.S. in zoology, University of Michigan
1976	Ph.D. in ecology, University of Michigan
1976-1980	Assistant professor, University of Minnesota
1980-1984	Associate professor, University of Minnesota
1984-	Professor at the University of Minnesota
2002	Elected to the National Academy of Sciences
2007	Invited distinguished speaker to the U.S. Department of State Committee on Energy and Natural Resources
2008	Awarded the International Prize for Biology
2010-2011	Member of the Carbon Offsets Working Group of the President's Committee of Advisors on Science and Technology (PCAST)
2012-	Professor, University of California Santa Barbara
2014	"Global diets link environmental sustainability and human health" published in *Nature*
2015-	Member of the Advisory Committee of the UK-based Our Planet, Our Health, providing financial support for environmental and health research

Notes

***1 High acclaim around the world**

According to a Web of Science survey, Prof. Tilman was the most cited environmental scientist in the 1990s and 2000s. He has won a series of awards including the 2008 International Prize for Biology.

***2 Sustainable Development Goals (SDGs)**

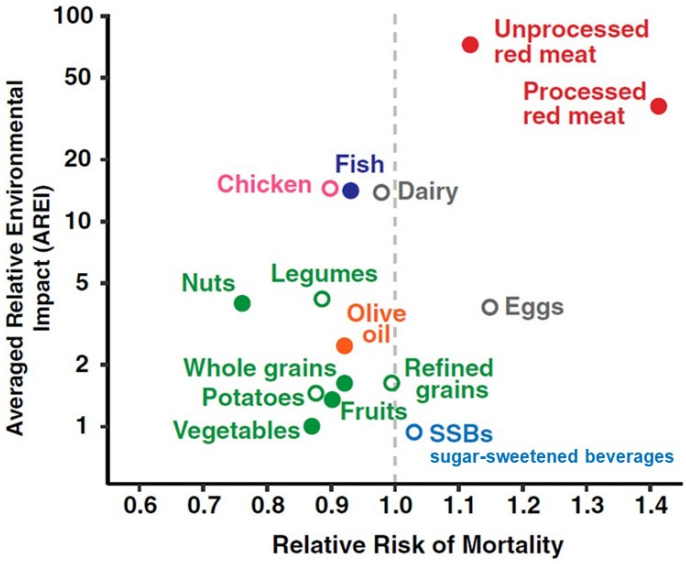
These are international goals to be achieved over the period 2016-2030, set forth in the 2030 Agenda for Sustainable Development adopted at the United Nations Summit in 2015. Comprised of 17 comprehensive goals and 169 targets designed to achieve a sustainable world, the SDGs are characterized by a pledge of leaving no one behind.

***3 Paris Agreement**

The Paris Agreement is an equitable and effective legal framework for the global action against the threat of climate change in the year of 2020 and beyond, in which all signatories—regardless of whether they are from developed or developing countries—joined. Unlike the Kyoto Protocol of 1997, which sets GHG emission reduction targets only for developed economies, the Paris Agreement applies to all signatories. It calls for holding the increase in the global average temperature to well below 2℃ above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5℃ above pre-industrial levels. Adopted at the 21st Conference by the Parties (COP21) at the United Nations Framework Convention on Climate Change held in Paris in December 2015, the Paris Agreement took effect in November 2016 and Japan became a signatory later in the month.

***4 Quantitative examination**

As shown in references 4 and 7, Prof. Tilman and his collaborators have quantitatively assessed the impact of various food groups on disease incidences, mortality and on the environment by means of meta-analyses. In the figure to the right, from reference 7, the x-axis shows the relative risk of mortality, where a relative risk > 1 indicates that consuming an additional serving of each food group per day is associated with increased mortality risk, and a relative risk < 1 indicates that this consumption is associated with lowered mortality risk. The y-axis is plotted on a log scale and shows the average relative environmental impact of producing a serving of each food group across five environmental outcomes relative to the impact of producing a serving of vegetables. Other analyses in references 4 and 7 looked at diet-related health incidences of type II diabetes, stroke, coronary heart disease and cancers, and at diet-related mortality rates from coronary heart disease. Environmental impacts were measured by assessing the degree of degradation in terms of GHG emissions, land use, water use, and water pollution (acidification, and eutrophication).



Association between a food group's impact on mortality and its averaged relative environmental impact. (ref.7)

***5 Trilemma**

A trilemma is a situation in which it is difficult to determine which one of three options to pursue. The term "diet-environment-health trilemma" is used in reference 4.

***6 Intergovernmental Panel on Climate Change (IPCC)**

The Intergovernmental Panel on Climate Change (IPCC) was established in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP) with the objective of conducting comprehensive assessments of human-caused climate change and its implications as well as adaptation and mitigation measures from scientific, technological, and socioeconomic perspectives.

***7 IPCC Special Report on Climate Change and Land (SRCCL)**

The official title of the report is "Climate Change and Land: An IPCC Special Report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems." It was published in August 2019 to assess scientific knowledge on sustainable land management in association with GHG fluxes in terrestrial ecosystems, adaptation to and mitigation of climate change, desertification, land degradation, and food security. Papers authored by Prof. Tilman, et al. (references 2 through 4) are cited 18 times in the report.

***8 Our Planet, Our Health**

As one of the groups under the Wellcome Trust, a UK-based charitable foundation, Our Planet, Our Health provides financial support to researchers working on food and climate change issues and their impacts on human health.

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Dr. Simon Stuart (UK)

Major research achievements and activities

Dr. Stuart, who began to engage in species conservation actions in the 1980s, was instrumental in the development of the 1994 IUCN Red List Categories and Criteria. These were then first used in the 1996 IUCN Red List, which can be seen as the prototype for the current IUCN[*1] Red List of Threatened Species[*2]. The Red List is an inventory of species at risk of extinction. With more than 110,000 species assessed to date, it is regarded as the most objective and reliable source of data on the extinction risk of species. Based on extinction theory[*3] and other observations, Dr. Stuart played a critical role in the introduction of the categories and quantitative criteria[*4] for the first time into the IUCN Red List, thereby removing much of the subjectivity in the assessment of extinction risk. As the chair of the IUCN Species Survival Commission (SSC) for eight years from 2008, Dr. Stuart led various initiatives undertaken by a network of more than 8,000 experts, playing an important role in increasing the number of species assessed for the Red List and engaging in efforts to expand science-based practical activities for the conservation of species. Adopted in countries across the world and attracting various funds[*5] for solving challenges faced in conserving biodiversity on Earth, the extinction risk assessment method used in the IUCN Red List has now become an indispensable tool for implementing international environmental policies.

The 2010 meeting of the Conference of the Parties to the Convention on Biological Diversity[*6] adopted the Aichi Biodiversity Targets[*7], of which Target 12 (By 2020, the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.) had been set with advice from Dr. Stuart. Data from the IUCN Red List is being used in assessing progress towards achieving this target. The IUCN Red List has also been used as a major source of information for policy decisions made under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (Washington Convention)[*8], and Dr. Stuart has contributed to this process as well, helping develop objective criteria for listing species.

One example of his engagement in practical activities is his leadership role in the Global Amphibian Assessment (GAA)[*9], the first-ever large-scale survey of amphibian species conducted worldwide, and showed that amphibians were heading toward extinction at a more accelerated rate than other species because of fungal diseases, habitat loss, and over-harvesting. It is significant that he sounded an alarm about the state of the natural environment, noting that a rapid decrease in the population of amphibians—which typically live in or near watery environments and hence are susceptible to changes in the environment both on land and in water—points to the occurrence of extensive environmental destruction not only in their habitats but also in surrounding ecosystems. His paper[*10] that reported the alarming findings is highly acclaimed in academic circles as exemplified by the fact that it was selected by *Science* as one of the 2004 Breakthroughs of the Year. As a result of the GAA initiative, the amphibian extinction crisis began to receive attention in scientific, policy, and conservation circles, leading to the formulation of a conservation action plan[*11] with a budget of some 400 million US dollars. Activities initiated by the GAA are continuing today as the GAA2.

Academic and career background

1978	Bachelor's degree (First Class) in applied biology from the University of Cambridge
1983	Doctorate degree in conservation biology from the University of Cambridge
1983	Joins staff of the International Council for Bird Preservation (now called BirdLife International) to co-author the African Bird Red Data Book
1986-1990	Officer of the IUCN Species Programme
1990-2000	Head of the IUCN Species Programme
2001-2005	Head of the IUCN Biodiversity Assessment Unit
2004	A paper in which he warned about the amphibian crisis is selected by *Science* as one of the 2004 Breakthroughs of the Year
2005-2008	Senior Species Scientist at the IUCN
2008-2016	Chair of the IUCN Species Survival Commission (playing an active role as the leader and spokesperson of the SSC, the world's largest network for species conservation)
2010	"The Barometer of Life," an article co-authored by Dr. Stuart and others calling for increasing the number of species assessed for the IUCN Red List, is published in *Science*
2016-	Advisor to the Steering Committee of the IUCN Species Survival Commission

2017- Director of Strategic Conservation at Synchronicity Earth, a UK-based conservation charity and donor, playing an active role by leveraging his expertise on species conservation and global network of relevant experts

Notes:

***1 IUCN**

Established in 1948, the IUCN is an international network for the conservation of nature, comprising states, government agencies, and non-government organizations (NGOs). It has approximately 1,200 member organizations and six commissions in which a total of some 15,000 scientists and experts from over 160 countries collaborate for the conservation of biodiversity. The IUCN was one of the winners of the 1993 Blue Planet Prize.

***2 IUCN Red List**

Its official name is the IUCN Red List of Threatened Species. Initially published as the Red Data Book in 1966, it has now become the world's most comprehensive source of information on the conservation status of animals, plants, and fungi across the globe. The IUCN Red List is a critical indicator of the health of the world's biodiversity, providing information on species' distribution ranges, population sizes, habitats, ecologies, use and trade, threats, and conservation actions.

***3 Extinction theory**

Extinction risk assessment methods employed by the IUCN are explained in detail in ref.1 of which Dr. Stuart is a co-author. This paper provides an overall account of the process of quantifying extinction risk and the technical background thereto. The initial concept, based on extinction risk theory and the principles of population viability analysis (PVA), was presented in ref. 2. The 1996 IUCN Red List was the first to use this approach of categories and quantitative criteria. The method makes use of information on population size, population growth and decline, range size and fragmentation, to estimate extinction risk, based on deterministic factors (loss of habitat, over-exploitation, pollution, introduced species, etc) as well as on stochastic factors affecting small populations (demographic stochasticity and environmental variability, catastrophes, genetic stochasticity, etc.).

***4 Categories and quantitative criteria**

The following descriptors were proposed in the paper (ref. 2) by Mace et al. as categories of endangered species, to which Dr. Stuart provided support, and were first to be adopted in the current format of the IUCN Red List.

-Critically Endangered (CR):

At least 50% probability of extinction within five years or two generations, whichever is longer

-Endangered (EN):

At least 20% probability of extinction within 20 years or 10 generations, whichever is longer

-Vulnerable (VU):

10% probability of extinction within 100 years

Quantitative criteria were then refined so that species could be assigned to the correct categories. More detailed definitions are provided based on the above.

***5 Various funds for solving challenges faced in conserving biodiversity on Earth**

Data in the IUCN Red List of Threatened Species are used by a number of donors, including the following four funding organizations—i.e., the Global Environment Facility (GEF), Critical Ecosystem Partnership Fund (CEPF), Save Our Species (SOS), and the Mohamed bin Zayed Species Conservation Fund (MZB)—to determine priorities in providing funds.

***6 Convention on Biological Diversity (CBD)**

The Convention on Biological Diversity is an international treaty aimed at the conservation of biological diversity, the sustainable use of its components, and the fair and equitable distribution of benefits arising from genetic resources. The CBD recognizes three levels of biological diversity, i.e., ecosystem, species, and genetic levels. Adopted in 1992, the CBD obligates signatory countries, according to their respective capacity, to develop national strategies and take necessary actions for the conservation and sustainable use of biological diversity. Acknowledging national sovereignty over natural resources, it calls for the fair and equitable distribution of benefits arising therefrom, among natural resource producing countries and user countries.

***7 Aichi Biodiversity Targets**

A set of targets established under the Strategic Plan for Biodiversity, as officially named, are called the Aichi Biodiversity Targets because they were adopted at the 10th meeting of the Conference of the Parties (COP10) to the Convention on Biological Diversity held in October 2010 in Nagoya, Aichi Prefecture. The Aichi Biodiversity Targets call for achieving five short-term goals and 20 specific targets by 2020, with an eye to the medium to long-term goal of realizing a world in which people live in harmony with nature by 2050.

***8 Convention on International Trade in Endangered Species of Wild Fauna and Flora (Washington Convention)**

Adopted in 1973 in Washington D.C. at a meeting of representatives of countries, it entered into force in 1975. Its aim is to have international trade in specimens of wild animals and plants regulated properly so as not to threaten the survival of the species. Depending on the degree of extinction risk, wild species are listed in one of the three appendices to the convention with their trade regulated accordingly. Specifically, commercial trade in species listed in Appendix I is prohibited in principle, whereas commercial trade in species listed in Appendix II requires a permit from exporting countries based on a non-detriment finding in terms of the impact of the trade on the species in question. Those listed in Appendix III are regulated by rules set by respective countries of origin.

***9 Global Amphibian Assessment (GAA)**

The GAA, a 2001-2004 joint initiative led by the IUCN, Conservation International (CI) and NatureServe, was launched for the purpose of conducting a comprehensive global survey of amphibians to assess the status of their populations across the world. As the leader of the GAA Central Coordination Team, Dr. Stuart ran the project by mobilizing more than 500 scientists from more than 60 countries. Activities initiated by the GAA are currently undertaken as the GAA2, a new five-year project (2015-2020) with the GAA3 commencing thereafter.

***10 Paper that reported the alarming findings**

See reference 3.

***11 Amphibian Conservation Action Plan (ACAP)**

In September 2005, the Amphibian Conservation Summit was convened by the IUCN Species Survival Commission (SSC) and the Conservation International (CI). A declaration adopted at the summit proposed the Amphibian Conservation Action Plan, which was published in 2007 and updated in 2015. Developed for use as a roadmap for the conservation of amphibian species at a global level, the ACAP is used by various conservation and funding organizations including the IUCN SSC Amphibian Specialist Group (ASG), the Amphibian Survival Alliance (ASA), and the Amphibian Ark.

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