ROBERT M. WHITE

1923–2015

Elected in 1968

"Development of methods of weather forecasting; leadership in the evolution of the World Weather Watch System."

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ROBERT MAYER WHITE, first administrator of the National Oceanic and Atmospheric Administration (NOAA), passed away on October 14, 2015. He provided visionary leadership in the National Weather Service, University Corporation for Atmospheric Research (UCAR), National Academy of Engineering (NAE), and National Research Council (NRC), and profoundly shaped the institutional structure of today's environmental science and services. He is survived by his beloved wife Mavis and children Richard and Edwina (Nina).

Bob White was born February 13, 1923, in Boston. He and his brother Theodore, the noted historian of American politics, rose from poverty through that city's fine public schools and distinguished universities, a characteristically American accomplishment in which Bob took justifiable pride. He received his bachelor's degree in geology from Harvard University and both his master's and doctorate in meteorology from the Massachusetts Institute of Technology. He served as a captain in the US Air Force from 1942 to 1945.

After completing his doctorate in 1950, he became chief of the large-scale processes group at the Air Force Cambridge

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Research Laboratory. In 1959 he joined the Travelers Weather Research Center in Hartford, Connecticut. When the Travelers Research Corporation was established in 1961, he became its president, eventually leading a staff of 150. With the late Thomas F. Malone, he pioneered private sector weather services in the United States.

White came to Washington in 1963 as director of the US Weather Bureau, one of the last appointments made by President John F. Kennedy. From the very beginning of his government service, Bob believed that all the federally funded meteorological services should present a united front. His efforts led to the establishment of the Office of the Federal Coordinator for Meteorology and Supporting Research and his appointment as the first federal coordinator.

Continuing his campaign for coordination and consolidation of environmental service organizations, he guided the establishment of the Environmental Science Services Administration (ESSA), which combined the US Weather Bureau with the US Coast and Geodetic Survey and the upper atmospheric research program of the National Bureau of Standards. Under his direction, ESSA ushered in the expanded use of satellite and computer technology and modernized the nation's weather warning and ocean monitoring systems.

He then led ESSA's transformation to the National Oceanic and Atmospheric Administration (NOAA) and served from 1970 to 1977 as its first administrator, steering NOAA toward a strong scientific research agenda and an active role in conservation issues. White himself helped create and implement legislation supporting conservation and environmental quality, such as the 1972 Marine Mammal Protection Act (MMPA) and Coastal Zone Management Act, the 1973 Endangered Species Act, and the 1976 Fisheries Conservation and Management Act (FCMA).

NOAA was charged with interpretation and management of the very broad congressional directives in these and other laws. Within a few years the FCMA changed the way many fisheries were managed worldwide. The MMPA addressed the critical need to reduce the killing by domestic commercial

fishermen of porpoises, seals, and sea lions, a highly sensitive and controversial issue that was eventually resolved through White's efforts. Similarly, the Endangered Species Act impacted many government agencies and a host of species—and set off never-ending controversies among users, watchers, and protectors of living things. Wolves, polar bears, eagles, and countless other creatures large and small can now qualify for protection. Again, White played a key role in the act's early implementation.

In his capacity as head of NOAA, White served as US permanent representative to the World Meteorological Organization (WMO) from 1963 to 1978, beginning a vigorous leadership role in international environmental affairs. He made crucial contributions to the development and implementation of the World Weather Watch, the backbone of global exchange of weather data; the Global Atmospheric Research Program (GARP), devised by WMO and the International Council of Scientific Unions (ICSU) in response to President Kennedy's call for enhanced research in weather and climate; and the International Decade of Ocean Exploration (IDOE), which massively advanced understanding of the world's oceans. GARP led to the 1979 Global Weather Experiment, which greatly accelerated weather forecast model development and advanced forecasting capabilities. With White's support, GARP evolved into the ongoing World Climate Research Program.

In 1977, increasingly concerned about the accumulation of greenhouse gases, climate change, and its pervasive effects on society, White decided that he could be more effective outside NOAA. He took a newly created position at the National Research Council as head of the Climate Research Board (CRB), where he focused on climate programs in the federal agencies in an effort to develop an effective national climate program.

Also in 1977, he became president of Joint Oceanographic Institutions, where he led the international phase of the Ocean Drilling Program with the drill ship *Glomar Challenger*. Using his skills in both science and diplomacy he successfully transitioned what had been a national program to an international

five-partner activity. He held that position until 1980, when he became president of UCAR, the only person to head both of the country's leading atmospheric and oceanographic institutions. Among his achievements at UCAR, he broadened its funding base beyond the National Science Foundation (NSF). New trustees from industry and business were brought in, encouraging a wider range of research on the atmosphere, climate, and their impacts on society.

In 1979 he organized and chaired the first World Climate Conference in Geneva, where he gave a far-sighted keynote speech projecting the possible consequences of human-induced warming of the Earth. The conference raised awareness of the potentially serious consequences of climate variability and change and prompted the initiation of focused climate research programs in the United States and many other nations.

As president of the NAE (1983–1995), White rapidly enhanced its status and stability. As NRC vice chair, he energetically raised funds for institutional initiatives such as the Arnold and Mabel Beckman Center in Irvine, California. He guided NRC advisory studies on a broad range of environmental issues, including stratospheric ozone depletion, acid deposition, loss of biodiversity, nuclear energy, radioactive wastes, the potential for waste reduction, and capacity building in developing countries. He was instrumental in laying the foundation for the international Council of Academies of Engineering and Technological Societies. This independent, nonpolitical, nongovernmental international organization would probably not have been successful without his involvement.

In 1996 White founded the Washington Advisory Group (WAG), recruiting founding members who included three former presidential S&T advisors, a former NSF director, and a former director of the National Institutes of Health, among others. Over the 14-year life of the company it did interesting and important work for a broad range of public and private entities, both in the United States and overseas. According to his colleagues, WAG simply would not have existed without Bob's tireless energy, the loyalty he showed—and earned from—his colleagues, and his love of creating new enterprises.

Bob White received a multitude of awards and honors, including the Tyler Prize for Environmental Achievement (1992) from the University of Southern California, the Charles E. Lindbergh Award for technology and environment (1990), the International Meteorological Organization Prize (1980), the Charles Franklin Brooks Award (1979) from the American Meteorological Society (AMS), the Rockefeller Public Service Award for Protection of Natural Resources, and in 1976 both the Smithsonian Institution's Fontaine Maury Medal for Contributions to Undersea Exploration and the International Conservation Award of the National Wildlife Federation. He was elected a fellow of five national and international scientific organizations, a member of the French Legion of Honor, and received eight honorary doctorates. He served a term as AMS president in 1980, and was vice president of the Marine Technology Society.

Meticulously scheduled and punctual, he was a virtuoso chairman whose meetings started on time and ended early while leaving no agenda item unresolved and no participant unheard. As a manager, he invited and took in ideas and advice, welcomed dissent and informed criticism, and made unhesitating but never uninformed decisions. And he always had time for lunches at favorite haunts, usually with a who's who of luminaries in science, government, and international organizations.

But his achievements were based equally on his personal qualities that over the years created a loyal and loving tribe of colleagues throughout the world. Anyone who ever worked *for* Bob forever after worked *with* him. Moreover—unusually in today's world—he seemed to have no enemies.

The overarching theme of White's distinguished career in science and government was leadership, characterized by his deep understanding of science, boundless energy, organizational genius, adamantine integrity, and ceaseless industry. He also remained a proud weatherman at heart, always excited by new technology, new problems, and new achievements in the field's science and the services it provides.

Above all, Robert M. White was a visionary builder—not of edifices or dams or bridges but of solid, substantial, and

enduring organizations based on sound science and vital societal needs. Today's national and international institutions that coordinate and focus science, provide atmospheric and oceanic data for research and operational support, link science and government, and provide vital environmental services were powerfully sculpted by this remarkably talented, dedicated, and fine man.