

Is ecology the science at the heart of environmental history? For many scholars, this is self-evident. Environmental history, Donald Worster declared, is about "the role and place of nature in human life." Alfred Crosby observed that "the ideology of environmental historians is at its root biological," while Ted Steinberg advised readers of the *American Historical Review* that environmental history provided a "more ecologically minded and socially sensitive approach."

It is not hard to see why this link seems fundamental. In the decades after World War II, protecting the natural environment from air, water, and toxic chemical pollution became urgent priorities in the United States. Rachel Carson's *Silent Spring* (1962) and Paul Ehrlich's *The Population Bomb* (1968) addressed biological concerns, and singularly influential institutional and legal advances including the U.S. National Environmental Protection Act (1969), the Clean Water Act (1972) and the Endangered Species Act (1973) were all tied to ecosystem concepts.

But does this association keep us from appreciating the broader scope of the environmental sciences in the U.S.? What might we gain if we focus on distinct communities of researchers who considered *physical* aspects of the environment to be their core fields of study? In so doing, what can we discover about the research questions they found significant? How did their guiding assumptions and commitments differ from practitioners in terrestrial ecology and biological oceanography? Might we better understand the interrelationships between environmental and social change by exploring the history of the physical environmental sciences, and how military interests constituted these fields after World War II?

The book I am writing is a history of how national security concerns shaped, in fundamental ways, the earth sciences, broadly conceived, in the first decades of the Cold War. Pentagon leaders viewed the natural environment as a bounded, dynamic space through which the new weapons systems of the Cold War (long-range bombers, guided missiles, and submarines) would pass. Long before the Cold War ended, military funding nurtured investigations of the Earth's upper atmosphere, atmospheric circulation, magnetic fields, oceans, sea floor, and land surface. It focused particular attention on the Arctic (militarily strategic) as a distinct environmental region. It built dozens of major university research programs and institutes, trained hundreds of scientists, and yielded much of the data that now constitutes our understanding of the properties of our planet's physical environment. Its practitioners often called themselves environmental scientists. Indeed, top White House officials used "environmental science" to refer to the physical branches alone as late as 1966--but many state figures did not share the view of ecologists that human activities placed the Earth's environment at risk.

There are many ways I could write this book: as a broad survey of Pentagon-supported research institutes, an intellectual history of emerging scientific ideas, or a study of presidential-level decision-making. But often we gain valuable insights into the production of knowledge by focusing on uniquely influential individual institutions. One stands out: Columbia University's Lamont Geological Observatory. Its initial operating funds came from military agencies. Its founding director, geophysicist W. Maurice Ewing, defined military oceanography as "gathering data about the environment in which undersea warfare will occur." He recruited Gifford Pinchot, Jr. (the famous forester's son) to research ways to increase ocean productivity through control-of-nature techniques. Lamont-trained researchers fanned out across the globe; one, Frank Press, became President Jimmy Carter's science advisor. Memory also joins history at this institution via the several dozen biographical oral history interviews I led with Lamont associates. According to Columbia University oral historian Ronald J. Grele, these comprise "one of the three or four most important oral history archives in the history of science."

Unfolding outward from Lamont to Washington, D.C.--to agencies, patrons, peer institutions, and researchers across North and South America, Europe, and beyond--this book explores and illustrates how the environmental sciences took their modern form. It also will encourage new work on Cold War earth sciences research in other leading scientific nations--a most promising topic for internationally comparative approaches.