

# Natural history must reclaim its place

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Support in developed countries for natural history—the study of the fundamental nature of organisms and how and where they live and interact with their environment—appears to be in steep decline. Yet natural history provides essential knowledge for fields as varied as human health, food security, conservation, land management, and recreation. In the April issue of *BioScience*, a group of scientists from institutions across North America details examples supporting their conviction that a revitalization of the practice of natural history will provide important benefits for science and society.

The 17-member group of authors, convened by Joshua J. Tewksbury of the University of Washington and the World Wide Fund for Nature's International office, notes that 75 percent of emerging infectious diseases of humans, including avian influenza, Lyme disease, cholera, and rabies, are linked to other animals at some point in their life cycle. Control strategies rely on knowledge of these hosts' [natural history](#).

Sustainable agricultural practices, such as companion planting, crop rotation, and pest control, likewise rely on knowledge of natural history, much of which was, however, discarded with the Green Revolution. Effective fisheries management relies on natural history—disasters such as the collapse of the Bering Sea walleye pollock fishery might have been avoided had it been used sooner. Rigorous forest fire suppression in the western United States during much of the twentieth century was another costly mistake that might have ended sooner if natural history knowledge had been used earlier. And recreational hunting and fishing have often benefitted when interest groups applied knowledge of natural

history and suffered when it was ignored.

Despite this, natural history collections are not expanding, and the number of active herbaria has declined since 1990 in Europe and North America. The majority of US schools now have no natural history requirements for a biology degree, a trend that has coincided with the rise of molecular, experimental, theoretical, and other forms of biology. These types of biology may be less expensive or be more likely to attract large grants and public recognition. The stagnation could also reflect more general public disengagement with nature in developed countries.

Although biological modeling has become more sophisticated, Tewksbury and his coauthors note that models must be built on field observations to usefully represent the real world. The important influence of microbes on [human health](#) and plants is a key new frontier in natural history research, the authors believe. And they see hope for the discipline, both within and outside of traditional natural history collections, in the rise of Internet- and smart phone-based technologies that allow the growth of broad partnerships, including citizen-science initiatives. Such linkages are starting to develop, but will need established professionals to self-identify as natural historians to provide the leadership needed for natural history to reclaim its necessary role, the authors assert.

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