

# Plant specimens provide powerful data about life in the Anthropocene

November 13 2019, by Alan Prather

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Researchers from Carnegie Museum of Natural History and Michigan State University report plant specimens are being used in novel new ways that could influence future environmental policy, species

conservation and collections-based science. Specimen digitization and new data analysis technologies increase the relevance of herbaria for scientific research, education, and societal issues like climate change and invasive species. The study was published Sept. 4 in *BioScience*.

Nearly 390 million [plant specimens](#) are kept in over 3000 herbaria around the world, with more specimens collected each day. Plant collection is a centuries old practice, and herbaria have long been a critical resource for discovering and formally describing new species, a core function that continues today. However, collections use is expanding to answer a wider array of questions.

"Specimens from the MSU Herbarium are routinely used for sources for DNA, to study evolution of plant-animal interactions, and to understand how plants cope with changing environments, none of which former curators and collectors like William J. Beal anticipated when adding to the herbarium over its 150+ year [history](#)," said Alan Prather, a faculty member in MSU's Department of Plant Biology.

The new uses of herbarium specimens documented by Mason Heberling, assistant curator of botany at Carnegie Museum of Natural History, Stephen Tonsor, director of science at Carnegie Museum of Natural History, and Prather, illustrate the increased value of specimens and herbaria in the Anthropocene. Changing use of specimens is part of a larger trend of change in the roles of natural history museums from repositories of knowledge to active leaders in [scientific research](#) that has a direct impact on life today.

"Museum specimens are being leveraged in innovative and powerful ways that most collectors and curators couldn't even dream of a century—or even decades—ago," said Heberling, "Natural history collections are perhaps more relevant than ever. These specimens have important stories to tell to understand the past, present and future of

life."

**More information:** J Mason Heberling et al. The Changing Uses of Herbarium Data in an Era of Global Change: An Overview Using Automated Content Analysis, *BioScience* (2019). [DOI: 10.1093/biosci/biz094](https://doi.org/10.1093/biosci/biz094)

Provided by Michigan State University

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