

**Testimony in Support of FY 2022 Funding for the
Department of the Interior and Smithsonian Institution**

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Submitted by:

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House Committee on Appropriations

Subcommittee on Interior, Environment, and Related Agencies

The Natural Science Collections Alliance appreciates the opportunity to provide testimony in support of fiscal year (FY) 2022 appropriations for the Smithsonian Institution and the Department of the Interior. We encourage Congress to make new investments that address agency backlogs and secure future efforts for the preservation, curation, growth and study of scientific and cultural collections within the Department of the Interior and the Smithsonian Institution. We request that Congress provide the National Museum of Natural History with at least \$60 million in FY 2022, with new funding to correct for a lack of adequate increases in recent years. Please provide the United States Geological Survey (USGS) with at least \$1.75 billion in FY 2022, with increased support for collections related activities.

The Natural Science Collections Alliance is a non-profit association that supports natural science collections, their human resources, the institutions that house them, and their research activities for the benefit of science and society. Our membership consists of institutions that are part of an international network of museums, botanical gardens, herbaria, universities, and other institutions that contain natural science collections and use them in research, exhibitions, academic and informal science education, and outreach activities.

Scientific collections, and the collections professionals and scientists who make, care for, and study these resources, are a vital component of our nation's research infrastructure. These collections and their associated experts contribute to the expansion of our bioeconomy. Whether held at a museum, government managed laboratory or archive, or in a university science department, these scientific resources form a coordinated network of specimens, samples, and data (for example, genetic, tissue, organism, and environmental) that are a unique and irreplaceable foundation from which scientists are studying and explaining past and present life on earth.

Preservation of specimens and the strategic growth of these collections are in the best interest of science and the best interest of taxpayers. Existing scientific collections that are properly cared for and accessible are a critical component of the US science infrastructure and are readily integrated into new research on significant questions. Specimens that were collected decades or

centuries ago are now routinely used in research in diverse fields related to genomics, human health, biodiversity sciences, informatics, environmental quality, and agriculture.

According to the U.S. Interagency Working Group on Scientific Collections (IWGSC), “scientific collections are essential to supporting agency missions and are thus vital to supporting the global research enterprise.” A 2020 [report](#) by the IWGSC presents a framework for estimating and documenting the long-term benefits, both monetary and non-monetary, generated by federal institutional collections. Additional recent reports have highlighted the value of mobilizing biodiversity specimens and data in spurring new scientific discoveries that grow our economy, improve our public health and wellbeing, and increase our national security.

In 2019, the Biodiversity Collections Network (BCoN) issued a community informed call for the development of an Extended Specimen Network, or ESN. The report, [Extending U.S. Biodiversity Collections to Promote Research and Education](#), outlined a national agenda that leverages digital data in biodiversity collections for new uses and called for building an Extended Specimen Network: “Science and industry rely on physical specimens housed in U.S. biodiversity collections. Rapid advances in data generation and analysis have transformed understanding of biodiversity collections from singular physical specimens, to dynamic suites of interconnected resources enriched through study over time. The concept of the 'extended specimen' conveys the current perspective of the biodiversity specimen as extending beyond the singular physical object, to potentially limitless additional physical preparations and digital resources.” This endeavor requires robust investments in our nation’s scientific collections, whether they are owned by a federal or state agency or are part of an educational institution or free-standing natural history museum or other research centers.

A [2020 report](#) by the National Academies of Science, Engineering and Medicine (NASEM), *Biological Collections: Ensuring Critical Research and Education for the 21st Century*, provided guidance to the NSF regarding the sustainability of living stock and natural history collections. The report argued that collections are a critical part of our nation’s science and innovation infrastructure and a fundamental resource for understanding the natural world.

The NASEM, BCoN, and IWGSC reports, articulate a common vision of the future of biological collections and define a need to broaden and deepen the collections and associated data to realize the potential for biodiversity collections to inform 21st century science. Collections are a critical resource for advancing the knowledge needed to address current global challenges such as climate change, biodiversity loss, and pandemics. The COVID-19 crisis has illustrated how inextricably linked humans are to the natural world. Biological collections, their extended data, and the experts that build and study them are globally important for understanding where viruses such as SARS-CoV-2 exist in nature or when they cross from their current hosts to humans.

The Smithsonian Institution’s National Museum of Natural History (NMNH) is the central federal partner in the curation and research on scientific specimens. Scientists at the NMNH care for 146 million specimens and ensure that the institution remains a global leader in scientific research and public engagement. To increase the availability of these scientific resources to researchers, educators, other federal agencies, and the public, NMNH is working on a multi-year effort to digitize its collections. Funding is required to ensure this work is completed.

The National Museum of Natural History is also working to strengthen curatorial and research staffing and to backfill positions left open by retirements and budget constraints. The current staffing level is insufficient to provide optimal care for the collections. Future curatorial and collections management staffing levels may be further jeopardized given funding cuts at science agencies, such as the United States Geological Survey that, until recently, supported staff positions at the National Museum of Natural History. We believe these changes significantly jeopardize our bioeconomy at a time when there are critical issues facing the country, where the network of collections and experts working with these collections are needed.

Interior is an important caretaker of museum collections as well; the Department has an estimated 206 million items, comparable in size only to the Smithsonian Institution. Although many of the department's collections are located in bureau facilities, numerous artifacts and specimens are cared for in non-governmental facilities, such as museums and universities.

In addition, the USGS furthers the preservation, inventory, and digitization of geological scientific collections, such as rock and ice cores, fossils, and samples of oil, gas, and water. The National Geological and Geophysical Data Preservation program helps states with collections management, improves accessibility of collections data, and expands digitization of specimens to ensure their broader use. One example of the returns from this program is the potash mineral deposit discovered in Michigan that is valued at an estimated \$65 billion. Rock samples from Michigan were entered into a national database, where private companies discovered the deposit's existence and are now assessing the potential for mining.

USGS supports the documentation and conservation of native pollinators through its Native Bee Inventory and Monitoring Lab (BIML). Pollinators, such as bees, are critical components of ecosystems and play an integral role in wildlife and habitat management and restoration. Three-fourths of the world's flowering plants and about 35 percent of the world's food crops rely on pollinators to reproduce. Given that pollinator populations are in decline globally, BIML's work in developing a nationwide method to inventory and monitor bee population trends on public lands is crucial.

USGS has more than a million specimens of birds, mammals, amphibians, and reptiles that are housed at the Smithsonian National Museum of Natural History. The Biological Survey Unit (BSU) consisted of USGS scientists stationed at the NMNH, where they conducted research on USGS-specimens of fish, reptiles, birds, and mammals that are curated at the NMNH. This arrangement went back to 1889. These specimens, data, and the research they enable are required to inform Department of the Interior land and natural resource management decisions, and often also support decision-making by State and Tribal governments. It is our understanding that the BSU has now been eliminated, with the Smithsonian taking over care of these collections. The work the BSU supported and conducted at the NMNH was important and in the national interest. There is a lack of clarity and understanding about how this work is currently being sustained, given the Smithsonian's own shrinking staff.

The Bureau of Land Management has a large backlog of cultural resources to inventory on public lands. Currently, only about 11 percent of public lands have been assessed for heritage

resources. Such assessments need to be conducted before unique resources are lost to looting, vandalism, fire, or environmental change.

The National Park Service must continue its investments in scientific collections into the future, which means cataloging millions of museum objects and connecting the resulting databases to national and global data portals. The National Park Service curates a wide range of specimens and artifacts, from historical and cultural items to preserved tissues from protected species and living microorganisms collected in our National Parks. Several parks have made progress on addressing planning, environmental, storage, security, and fire protection deficiencies in museum collections, but much work remains, and present and future collections will be fundamental for effective management efforts.

Conclusion

Scientific collections are critical infrastructure for our nation's research enterprise. They are a national treasure that help support the nation's bioeconomy. Research specimens connect us to the past and are used to document and solve current problems. They allow us to predict threats to human health, find successful methods for ensuring food security, and address the impact of future environmental changes. Sustained investments in scientific collections are in our national interest. We also see these investments as critical for our efforts to grow diversity and inclusion in the scientific workforce.

The budget for NMNH has not seen adequate increases in recent years. We urge Congress to provide NMNH with at least \$60 million in FY 2022 to allow the museum to undertake critical collections care, make needed technology upgrades, and conduct cutting edge research. Please support adequate funding for programs within Interior bureaus that support the preservation and use of scientific collections – a truly irreplaceable resource. We encourage Congress to provide the USGS with at least \$1.75 billion in FY 2022, with increased support for collections related activities.

Thank you for your thoughtful consideration of this request.