



COLLECTIONS

2021 Report of the University of Wisconsin Zoological Museum

Dear UWZM Family and Friends

The past two years have presented many new challenges for all of us. In our goal to stay healthy, we have had to manage the University of Wisconsin–Madison Zoological Museum and collections remotely. In the summer of 2021, staff were allowed to resume relatively normal activities. However, we were still masked, practicing social distancing and very careful about exposing others to illness. As a way to keep everyone informed and engaged with the activities at the Museum, we have prepared this annual report. We have discussed this idea many times, now the ongoing pandemic has spurred us to move from proposal to publication. This is our first issue.

While working remotely and transitioning back to in-person, we have experienced a number of staff changes. At the IBio department level, Lauren Ritters replaced Jeff Hardin as Department Chairperson; Duane Barnes (facility manager) was replaced by Brandon Dowd, and Carol Cooley (HR generalist) was replaced by Laurel Buss. Museum staff have experienced changes as well. As part of a major revision at the UW System level,

Emily Halverson's title changed from Museum Registrar to Collections Manager and my own title changed from Curator of Collections to Associate Museum Director and Curator of Osteology. Former Curator of Mammals and Birds Paula Holahan retired and Dianna Krejsa was hired in that position. Jason Miszaniec was also hired as a part-time Museum Scientist. You can learn more about the new people and some of our endemic staff in this issue, along with new and expanded Museum efforts. Because it is always nice to see people and progress at the Museum, we have included a variety of color photos. Certainly not a replacement for in-person visits, but we hope it reminds you of the continuous efforts of the staff, students, volunteers, honorary fellows, adjunct curators and everyone else who works hard to make the UWZM a rich and valuable resource.

We greatly appreciate the in-kind and financial support we received in 2021; it has made an incredible difference in what we have been able to do at the Museum. We look forward to being able to welcome everyone back very soon. I wish you good health in 2022!

Laura A Monahan
Associate Museum Director and
Curator of Osteology

Museum staff at eyeball lecture, 24 January 2022. Behind the masks: Left, Emily Halverson, Jacki Whisenant with assorted eyeballs, student Jackson Guthart, John Lyons with blue whale eyeball, Kandis Elliot, Laura Monahan; seated: Greg Mayer, Jason Miszaniec, Dianna Krejsa.



New Faces at the UWZM



Dianna Krejsa (CRAY-suh) became our new Curator of Mammals and Birds in March 2021. Dianna came to us from Angelo State University (San Angelo, TX) where she worked as Collections Manager for the Angelo State Natural History Collections from 2017 to early 2021, overseeing operations and student management within the Divisions of Mammals, Birds, Amphibians and Reptiles, Herbarium, and Genomic Resources (frozen tissues). During her years with Angelo State, she assisted in student-driven, voucher-based research in the mountains of far West Texas, the central plains of the Texas Panhandle, the tall-grass prairie of Kansas, and

equatorial locales in Costa Rica. Prior to that, she received her Master's degree from the University of New Mexico–Albuquerque, studying the

population genetics of North American wolverines and working as graduate curatorial assistant with the Museum of Southwestern Biology. During her academic studies, field and museum work brought her to the tundra of northern Canada, the tropics of Ecuador and Panama, and many places in between.

Dianna is originally from Indianola, IA. She attended Simpson College for her undergraduate degree and sparked an interest in natural history while attending classes, creating study skins, and articulating skeletal specimens within the Biology Department there. Here at the UWZM, she plans to emphasize the importance of the extended specimen—expanding the diversity of preparation types and data taken from each specimen—at the museum and in the research program of UW students and colleagues.

Jason Miszaniec (Mish-an-ick) joined the UW Zoological Museum in the fall of 2020. Jason holds a dual appointment with the Department of Geography as a post-doctoral research associate, and with the UWZM as a museum scientist. Jason is an environmental archaeologist and historical ecologist who studies Indigenous subsistence strategies and environments through the study of archaeological animal bones. He has 9 years of field experience and has worked in Alaska, Greenland, Labrador, and Newfoundland. He is primarily interested in past fisheries and how these archaeological data sets can inform current management strategies.

Jason hails from Quebec, Canada, where he completed his bachelor's degree in Anthropology at McGill University. He became interested in the interaction of past people and environments during his Master's Research at Memorial University of Newfoundland where he studied past plant use among Arctic hunter gatherers. Jason earned his PhD from the University of California–Davis, where he investigated human-environmental interactions through identification of archaeological fish bones from Norton Sound, Alaska representing 2000 years of human history. Jason's

current research is on using oxygen isotopes from persevered fish ear stones to reconstruct past sea-surface temperatures from the North Bering Sea to better understand how peoples adapted to past climate change.

At the museum Jason works with archaeological legacy collections of animal remains from past excavations in the Aleutian Islands and Kodiak Island. Identifying and cataloging these collections can breathe new life into these old bones, providing novel insight into preindustrial resource use as well valuable species baseline data. The goal is to make the data available to researchers and descendant communities, through publications and hosting the findings in open-source databases, such as Arctos and Neotoma.



Jason holds a Goliath grouper skull in one hand and a bass skull in the other for comparative scale. The skeletal remains on the trays are among the archaeological legacy collections Jason is reviewing and identifying for the UWZM. The front tray holds a series of fur seal humeri while the other tray is a mix of stellar sea lion bones.

Collection Statistics 2021

Loans • There were 45 loan requests and more than 1050 loaned specimens.

Accessions • There 82 new accessions in 2021. Some highlights include:

polar bear, tapir, impala, red kangaroo, tiger, three wolves, 10 cranes, over 300 bats, and a full lion and leopard mount

Publications & Citations • In 2021, there were three publications that used UWZM specimens or were original research conducted by UWZM staff and emeritus affiliates. In 2020, there were nine publications and 725 citations. So far in 2021, publications out of the UWZM were cited 783 times.

Specimen Totals

Skeletons • 21,202

Fishes • 21,500

Mammals • 11,807

Birds • 10,894

Mollusks • 8,318

Amphibians and Reptiles • 7,252

Scientific Instruments • 1,420

Fossils • 883

Tissues • 360 samples from 131 individuals



Specimen Preparation at the UWZM

New protocols for specimen preparation are being introduced within the UWZM. These include taking tissue samples (heart, lung, kidney, spleen, liver, occasionally muscle, and other tissue types) from every specimen prepared. Specimens are also screened for ectoparasites and endoparasites, external and internal reproductive condition is assessed, and embryos are documented and stored. Ectoparasites will be archived within the Wisconsin Insect Research Collection (WIRC) as a new cross-collection collaboration. Descriptive data on the specimen, ancillary parts, their quality, specimen provenance, and preparator

data are all being recorded in a new data recording system that will aid in tracking tissues, embryos, parasites, stomach contents, etc.

Along with new preparation and data recording protocols, new biological and chemical safety protocols have been established to train students and staff and make our preparation laboratory BSL-2 certified. Pending funding and successful grants, the space is slotted for renovation to better accommodate BSL-2 standards and grow a frozen tissues biorepository for securely storing genome-quality samples.



UWZM graduate student Jacki Whisenant and intern Jackson Guthart stand with study skins they and the Museum Studies class made during the 2021 fall semester.

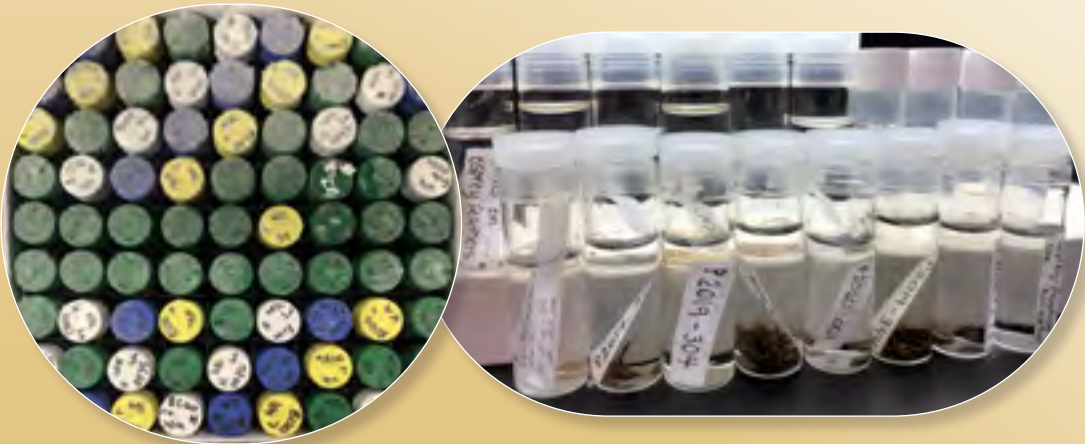
Voucher-based Fieldwork

The UWZM was recently granted approval on an IACUC (Institutional Animal Care and Use Committee) protocol allowing for the collecting of small mammals. Trapping at the UW Arboretum provided specimens for the students of the Museum Studies course to try their hand at the preparation of research-quality study skins. Future surveys of other parts of the Arboretum and surrounding State Natural Areas are planned for next spring and summer.



UW-Arboretum Curtis Prairie

Ancillary parts taken during specimen preparation expand the utility of our vouchered occurrence records. Pictured below are a box of ultra-frozen tissue samples and parasites taken from hosts.



Paula Holahan Retires



Paula Holahan

In July 2020, after nearly 19 years at the Museum, Paula Holahan retired. Paula was hired in September 2001 as the Curator of Mammals and Birds at the UWZM. During her tenure, Paula supervised and mentored hundreds of students. She also updated the taxonomy of all mammal and bird specimens at the UWZM. She cataloged a significant backlog of previously uncatalogued skins, mounts, eggs and nests and reorganized the mammal and bird skin and mount collections. Paula and her colleagues made significant progress organizing, cataloging and making available the specimens, slides and reprints in the Harland Mossman Developmental Collection. Under her supervision, decades’ worth of accumulated specimens in the freezer were finally prepared, cataloged, and installed in the collections.

Curator Spotlight: John Lyons

John Lyons has been associated with the University of Wisconsin Zoological Museum for most of his professional career, beginning as a grad student in the early 1980’s. When he became a fisheries research biologist for the Wisconsin Department of Natural Resources in early 1985, he was named Adjunct Curator of Fishes. He continued in this role for his entire 33 years with the WDNR, depositing thousands of fish specimens from his work in Wisconsin and other states. He also used his Adjunct Curator position to carry out scientific studies and conservation projects on the freshwater fishes of Mexico, and many specimens from there ended up at the UWZM. When John retired from WDNR in late 2017, he was named Curator of Fishes, a position he holds today.

Originally from southern New York State (Poughkeepsie), John became fascinated at an early age with fish and the places they live. He received his BS in Biology from Union College in Schenectady, NY, and then came to UW-Madison for his MS and PhD in Zoology. He fell in love with Madison and Wisconsin and has been fortunate to spend his life and raise his two daughters and son here. His is a self-described “fish nerd,” interested in anything and everything fish and water related, including fish research, sport fishing, fish keeping in aquaria, reading about fish and fishing, and cooking and eating fish.

At present, John is heavily involved in research, education, and outreach involving the UWZM. He continues scientific studies and conservation efforts for fish and their habitats in Wisconsin and Mexico. Each spring he team-teaches the Ecology of Fishes course, and he mentors students throughout the year. And he regularly makes public presentations and writes scientific and popular articles on fish topics.



Accomplishments for 2020 and 2021

- Completed a scientific expedition to Mexico in Feb 2020, studying the freshwater fishes of portions of the east-central states of San Luis Potosí and Veracruz in the Sierra Madre Oriental.
- Carried out nearly 100 surveys of fishes in Wisconsin waters.
- Worked with the Collections Manager to add nearly 1,000 jars of fish to the UWZM collection from the Upper Midwest, Southeastern U.S., and Mexico. The collection now stands at about 21,500 cataloged jars, representing over 1,000 fish species and nearly 250,000 specimens.
- Completed a successful project to re-establish the state-endangered starhead topminnow in a portion of its former range in the Wisconsin River.
- Helped oversee, with co-leaders from Mexico and Austria, a global coalition of scientists, conservationists, and aquarium hobbyists to help conserve the Mexican fish family Goodeidae, nearly all of which are rare and at risk of extinction.
- Taught Ecology of Fishes (Zoo 510) in spring 2020 (half in-person, half virtual) and 2021 (virtual).
- Presented scientific (3 virtual, 1 in-person) and popular (2 virtual, 1 in-person) talks on fishes.
- Published 5 scientific and 20 popular articles on fishes.
- Named the 2021 Riverway Champion by the Friends of the Lower Wisconsin Riverway.

Profile: Bill Reeder



William G. Reeder's interest in animals and natural history, as well as his love of old books and libraries, began in his childhood in Los Angeles, CA. Bill clearly remembers a grade-school teacher who helped the young students provide scientific names for the plants in the school's garden; this seemingly simple event significantly influenced Bill's relationship to the natural world. During the same years, his father was a high school teacher of book binding, and Bill accompanied his father and his father's graphic arts club on trips to museums and libraries.

This confluence of nature and old books proved pivotal. Bill's interest in old books greatly influenced his interest in animals and systematics, and his interest in animals greatly influenced his love of beautiful old natural history books. At an early age, Bill began collecting seashells along the beaches of Los Angeles. His high school was only a few blocks from the Los Angeles County Museum and a shop where a bookseller sold used books. He visited both frequently. His mollusk collection must have been quite good, evinced by the fact that as a high school student, he traded his shell collection for several rare books, one of which had woodcuts from the 1500s. The stage was set for two of Bill's major life pursuits.

Animals and books were only two pieces of diversity that captured his curiosity. Bill became more focused both on animal systematics, zoological museums, and historically important books as he continued through college at UCLA, and during his Ph.D. work in the 1950s at the University of Michigan.

One of three studies of West Indian birds and fish by an unknown artist. Watercolor, pencil, ink. [Caribbean region?], [1741] in hand-ruled mats. Localities mentioned include Cuba, Jamaica, St. Christopher (St. Kitts), Dominica, and cities in Colombia and Venezuela. Gift to Special Collections from the Friends of the UW-Madison Libraries in honor of William G. Reeder.

Photo courtesy of UW-Madison Special Collections.



In 1957 Bill was hired as a faculty member by the Zoology Department and later as the Director of the Zoology Museum at the University of Wisconsin-Madison. He taught the Biology of Vertebrates, Field Zoology, and Introduction to Zoology. About 25 graduate students did their theses and dissertations with his guidance. Bill's class on Biology of Vertebrates included trips to Special Collections in the Memorial Library. Bill collaborated on these class trips with librarians John Tedeschi, Robin Rider, and the staff who would ferret out volumes, some containing beautiful woodcuts of animals from expeditions around the globe. Bill, then and today, strongly believes that libraries and especially Special Collections should be used and appreciated by university students. Bill and Tedeschi became good friends during those years. Their friendship and mutual respect catalyzed their joint efforts through the Friends of the University Libraries for many years.

In 1978 Bill resigned his professorship at UW-Madison and moved to the University of Texas at Austin where he became Director of the Texas Memorial Museum and professor of Zoology. He maintained his friendship with John Tedeschi and his interest in the library continued. An early product of their relationship was the significant exhibition, "Instauratio Magna," that was organized in Special Collections in 1988-9. The organization and choice of books for

Zoologist, Library Advocate, and Scholar

the exhibition were made by Tedeschi. Bill edited the catalog that beautifully demonstrated the breadth and depth of the UW-Madison Library's Special Collections. This project was in support of a major push from Chancellor Donna Shalala, who stated:

Without first-rate libraries, we could not build the future on the past. We could not utilize our laboratories. The process of education and discovery would erode and diminish. This exhibit celebrates the quality of our library collections and the vital role they play in our university.

Chancellor Donna Shalala, 1988



*Bill Reeder with Asian pheasant in March 2019
Photo by Katy Reeder at the Zoological Museum,
Noland Hall, Madison, WI.*

After extensive discussion with library staff and the Friends, Dean of Libraries Kaye Gapen established a UW Libraries Special Advisory Committee on Financing in 1989. Bill was asked to chair the committee even though he was still at the UT-Austin. The committee recognized that, up until then, the Friends of the Libraries had not been a fund-raising body; it was concerned instead with library collections and functions.

In 1993, Bill retired from the University of Texas and returned to Madison to be near family. Tedeschi recommended that Bill be placed on the Friends of the Libraries board as an ex-officio member; he served in this capacity from 1993-4 through 2000-1 as a Special Consultant. At this same time, Bill's generous funding to the library enabled specific purchases for Special Collections of books about the History of Science and the History of the Book. He also gave books from his personal collection to Special Collections that resulted in an exhibit of Reeder Family Books in 1992-3 along with a catalog. He became a regular member of the Friends Board in 2001, vice president in 2002, and president from 2003 through 2006. As his term as president came to close, he volunteered as a researcher at the UW-Zoological Museum in 2005; that work continues to this day.

The Memorial Library and Special Collections are indeed special, providing unique opportunities for faculty and students to explore and interact with rare materials in collaboration with expert library staff. Bill

was a passionate advocate for these types of interactions when he led the Board of the Friends of the Library. He also continued his interest in seeing the Friends of the Library and Special Collections supported financially. He commented as he completed his term of president of the Board, that the Friends needed to have its annual budget doubled to protect against future uncertainties. He takes some pleasure in that persons who heard his comments later acted to double the Friends' foundation funding.

I thank Bill and his daughter, Katy, for chatting with me about his interest in the systematics of animals, his interest in old books and libraries

September 23, 2021 By John J. Magnuson, Board Member, Friends of the UW-Madison Libraries

Full article: <https://www.library.wisc.edu/friends/2021/09/23/profile-bill-reeder-zoologist-library-advocate-and-scholar/>

Thanks for your Support!

Thank you to all our volunteers, student interns, and other supporters of the UWZM! Here are a few projects within the collections that experienced UWZM affiliates helped progress or completed in the last year:

Elizabeth Pillaert • Updating the Galapagos collection

Peter Overton • Updating the Galapagos library collection

Janet Speth • Digitizing the mollusk collection

William Reeder • Curating UWZM library and other records



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UWZM Collaborations

Over the years, the UWZM has established collaborative transfer agreements with a number of local organizations who maintain live animal populations, such that the Museum receives animals and associated information upon the death of the animal. These specimens have enhanced the collections with a broad range of exotic species and provided steady incoming local species to augment the existing collections.

Collaborating institutions include the **Henry Vilas Zoo** in Madison, Wisconsin, which is accredited by the Association of Zoos and Aquariums. The **Milwaukee County Zoo** is also AZA accredited. Although quite different in size and breadth, both institutions prioritize animal conservation and have provided animals to the UWZM for decades. In 2020, the **Racine Zoological Gardens**, an AZA accredited zoo in Racine, Wisconsin, began depositing animal specimens at the UWZM.

The **International Crane Foundation**, headquartered in Baraboo, Wisconsin, works worldwide to conserve cranes and their habitats. They have donated cranes to UWZM for many years. Because of this connection, we have fourteen of the fifteen species at the UWZM.

The **Dane County Wildlife Center** cares for roughly 4,000 injured or orphaned animals each year. For the past 10 years, we have received regular donations from the Dane County Wildlife Center.

The **Wisconsin Department of Natural Resources (WDNR)** has long provided specimens to the Museum from the Endangered and Threatened species list and regional offices. Recently, a new transfer agreement was established to archive past and future bat specimens submitted to the DNR and to the **Wisconsin State Laboratory of Hygiene (WSLH)** for rabies testing. Nearly 350 bats were in the initial transfer, and we anticipate a steady intake of these Chiropterans that are among Wisconsin's most imperiled species requiring conservation-driven research.

We are also a federal repository for endangered species and hold a number of **United States Fish and Wildlife Service (USFWS)** permits, and specimens collected or imported under these permits. In 2021, we re-established a connection with local federal officers to serve as depository for federal confiscations.

