WELCOME TO ZOONOMICS NEWS!

This newsletter, compiled by the Center for Zoonomics based at Zoo New England, is your place to share and learn about the exciting work zoos and aquariums are doing in the fields of genetics and biobanking.

To keep this newsletter as dynamic and relevant as possible, **we'd love to hear from you!** Whether you're working on a new project, have a recent publication to share, or want to highlight upcoming events or activities, let us know. We're here to celebrate and share your contributions with the community. Send your updates and questions to zoonomics@zoonewengland.org.

Please feel free to share this newsletter with colleagues and friends who may be interested. They can join the listserv here.

UPCOMING EVENTS

Beyond the Jar: Challenges, Innovations, and Opportunities in Digitizing Fluid-Preserved Specimens

Join iDigBio, the national coordinating center for the NSF-funded Advancing Digitization of Biodiversity Collections (ADBC) program, for a webinar on Tuesday, October 6, 2026, from 2–3 PM ET. iDigBio digitizes data and media for millions of U.S. biodiversity specimens and makes them available online for researchers, educators, and the public. Wet specimen collections are among the most valuable yet hardest to digitize; this session will cover practical imaging approaches, strategies for labor-intensive collections like marine invertebrates, lessons from large-scale digitization efforts, and workforce considerations. Register here.

Updates from AZA's Molecular SAG 2026

This webinar, held Tuesday, October 20, 2026, from 2–3 PM ET, will update the Association of Zoos and Aquariums (AZA) community on the activities of the Molecular Data for Population Management Scientific Advisory Group (SAG), with recent examples of how molecular data have been used to inform population management (SSPs, reintroduction programs, etc.). The session will include presentations on work from Rachel Johnston (Zoo New England), Jessica Peers (University College London), Kate Rodriguez-Clark (Smithsonian's National Zoo and Conservation Biology Institute), Iliana Baums (Helmholtz Institute for Functional Marine Biodiversity at the University of Oldenburg) and Aryn Wilder (San Diego Zoo Wildlife Alliance). For more information and registration, visit the site here.

From Anthropology to Zoology: Arctos as a Shared Solution for Diverse Collection Types

Join the Arctos consortium on Tuesday, October 20, 2026, from 2–4 PM ET for a webinar on Arctos, a Linked Open Data collection management system supporting 5.9 million records and 1.1 million media objects from over 300 collections at 67 global institutions. Presenters spanning anthropology, entomology, genomic resources, paleontology, and botany will showcase gold-standard records and day-to-day data management tools. The link for registration and additional information is here.

ISBER 2027 Global Biobanking Congress

Registration is now open for the International Society for Biological and Environmental Repositories (ISBER) 2027 Global Biobanking Congress from May 4–6, 2027, in San Diego, California. Now in its 25th+ year, the Congress is the only truly global biobanking event, bringing together biobankers, researchers, and industry partners from six continents to learn, connect, and collaborate. For additional information, visit the ISBER website.

UPDATES & ANNOUNCEMENTS:

Biobank Alliance Working Group

The Biobank Alliance Working Group, composed of institutional representatives and liaisons, continues to meet monthly to develop an action plan for a Biobank Alliance to make zoo and aquarium samples more findable, accessible, interoperable, and reusable (FAIR) for research and conservation through shared standards of practice. In July, the group submitted a Letter of Intent of the initiative to the AZA Board, co-signed by all 10 Institutional Representatives and the Chairs of the Biobanking SAG, Molecular SAG, and Research and Technology Committee. The AZA Board responded positively and gave the green light for this effort. Contact Danica Wolfe at zoonomics@zoonewengland.org with any questions.

Job Opportunity: Director of Conservation Biotechnologies — San Diego Zoo Wildlife Alliance

San Diego Zoo Wildlife Alliance is hiring a Director of Conservation Biotechnologies to lead its integrated conservation genetics, reproductive sciences, and biodiversity banking teams (including the Frozen Zoo®). The Director will guide research strategy, build partnerships with government agencies, NGOs, and academic institutions, and oversee team leadership and budget, reporting to the Vice President of Wildlife Conservation Science. Apply here.

San Diego Zoo Wildlife Alliance and Species360 Partner to Advance Biobanking for Global Species Conservation

San Diego Zoo Wildlife Alliance (SDZWA) and Species360 announced a new partnership to build a shared global system linking biobanking data with animal health and care records. The collaboration will integrate data from SDZWA's Frozen Zoo®, the world's largest repository of viable wildlife cells, with over 11,500 cell lines representing more than 1,300 species, directly into Species360's ZIMS, enabling researchers to locate, prioritize, and use genetic material held by zoos, aquariums, and conservation organizations worldwide. The effort supports SDZWA's goal of banking genetic material from all endangered species by 2075 and will extend ZIMS access to regional biobanking partners in Kenya, Vietnam, Hawai‘i, and Peru. With investment from EAZA, AZA, and the Toronto Zoo, the partnership will also connect ZIMS with the Species Conservation Toolkit Initiative's PMx software to incorporate gametes and somatic cells into population planning. Read the full announcement here.

2026 Boden Research Conference: Cell Cryobanking and the Role of Museums

The 2026 Boden Research Conference was held September 7–11, 2026 at the Melbourne Museum, bringing together Australian and international experts on cell culture and cryopreservation to support wildlife conservation and research in Australia. The event was organized by the Museums Victoria Research Institute and supported by the San Diego Zoo Wildlife Alliance Frozen Zoo® and the IUCN SSC Center for Species Survival Biodiversity Banking. More information about topics covered at the conference can be found here.

PUBLICATIONS

Zoos and aquariums worldwide are making great contributions to genetics research and biobanking. If you have or know of a recent publication in this area, please e-mail us at zoonomics@zoonewengland.org so we can include it in our next newsletter.

A Coordinated Biobank Alliance for the Zoological and Conservation Community

This perspective by the Biobank Alliance Working Group outlines the case for creating a coordinated biobank alliance across zoos and aquariums that develops and delivers shared resources to support the collection, storage, and sharing of biological samples and associated data across the zoological and conservation community. The authors describe how the siloing of biospecimen collections has limited the use of samples for research and conservation, and highlight barriers to address, including data privacy concerns, unresolved benefit-sharing questions, fragmented institutional access policies, and limited adoption of shared data standards. Drawing on lessons from the EAZA Biobank and human biobanking networks, the authors call for an alliance built on trust, equity, discoverability, and shared standards, guided by principles of responsible stewardship, transparency, and reciprocity. The work described here laid the foundation for the current Biobank Alliance Working Group. Read the article in ***Zoo Biology.***

Integrating Biobanking into Conservation Practice: The Development and Impact of the EAZA Biobank

This article describes the EAZA Biobank, marking ten years since the Biobank's establishment. Using the Biobank as a case study, the authors describe how its four-hub model, built on EAZA's network and ZIMS data-sharing, has grown through community support. They present a gap analysis of IUCN Red List threat status, breeding programs, and phylogenetic diversity to guide future sampling priorities. The article argues that zoological biobanks must keep evolving alongside genomics and cryobiology, linking samples to the data they generate so the model can scale into a global, standardized biobanking framework. Read the open-access article in<> *Zoo Biology*.<>

Biobanking Biodiversity: Recent Strategies, Challenges, and Opportunities

This review from colleagues at the Smithsonian's National Zoo and Conservation Biology Institute examines the current state of wildlife biobanking as a critical conservation strategy amid accelerating biodiversity loss. The review surveys cryopreservation approaches across sample types and taxa, highlighting challenges around sample availability and species-specific cryotolerance, and discusses the growing role of digital biobanking in integrating large volumes of sample-associated data into conservation efforts. The authors also outline emerging frontiers, including ambient-temperature preservation, omics-informed precision biobanking, AI-assisted data interpretation, and the development of global biobanking networks. Read the review in the *Journal of Reproduction and Development* .

Connecting Biodiversity Biobanks in the Global Infrastructure Landscape

A new paper in BioScience maps how the Global Genome Biodiversity Network (GGBN), a consortium of 121 biobanks across 40+ countries holding over 7 million biological material records, connects with major global infrastructures (INSDC, BOLD, GBIF, DiSSCo, and others) to link physical specimens with sequence data and metadata into a unified "biodiversity knowledge graph." The article, co-authored by members of EAZA, the IUCN SSC Animal Biobanking for Conservation Specialist Group, San Diego Zoo Wildlife Alliance, and the Royal Zoological Society of Antwerp, highlights ongoing efforts to bring zoo and aquarium-held animal genetic resources into standardized, discoverable data frameworks, improving

cross-institutional access to banked materials for conservation applications like genetic rescue and assisted reproduction. Read the article in *BioScience*.

Genomics-informed Management of Ex Situ Populations

This essay by colleagues from Antwerp Zoo, Copenhagen Zoo, EAZA and others examines how genomics can strengthen the management of EAZA ex situ programs (EEPs), which currently safeguard over 600 taxa across more than 350 European zoos and aquariums. Using genomic-scale computer simulations, the authors show that species with large ancestral population sizes and low fecundity are most vulnerable to genetic load and inbreeding depression, and that founder population size is especially critical for large-ancestral-population, high-fecundity species with slow initial population growth rates. Due to a lag effect known as "drift debt," genomic erosion often doesn't become apparent until roughly three generations after founding, suggesting biobanking efforts are best prioritized early in a program's history. The authors argue that incorporating genomics data, alongside traditional pedigree records, can better maintain genetic diversity, reduce genetic load, and identify inadvertent hybridization in ex situ populations. Read the open-access article in *Conservation Biology*.

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